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TM 9-1430-1256-12-1(FMS)

TECHNICAL MANUAL

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL

CHECK PROCEDURES

TARGET TRACKING, TARGET RANGING, AND MISSILE TRACKING RADAR SYSTEMS AND RADAR TEST SET GROUP

IMPROVED NIKE-HERCULES AIR DEFENSE GUIDED MISSILE SYSTEM (U)

(ALLIED CONFIGURATION)

NATIONAL SECURITY INFORMATION Unauthorized Disclosure Subject to Criminal Sanction,

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DEPARTMENT OF THE ARMY

SEPTEMBER 1983

Cossified by NIKE SECURITY GUIDE, Aug 79

TM 9-1430-1256-12-1 C1

Change) No. I)

DSK:

HEADQUARTERS, DEPARTMENT OF THE ARMY Washington, D.C., 1 JUNE 1984

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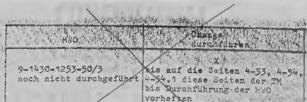
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TM 9-1430-1256-12-1 (FMS), 1 September 1983, is changed as follows:

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1 (U). The pages affected by this change, appearing in the following listing, are to be inserted in the manual after the MWO has been applied. Those pages identified as "All systems" may be inserted immediately. Added or changed material is indicated by a vertical line in the margin of the page. The completely revised tables are indicated by a vertical line by the title only. Old pages removed from the manual are to be destroyed in accordance with AR 380-5 or applicable security regulations.

Remove pages	Insert pages	Effectivity
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JOHN A, WICKHAM, JR. General, United States Amony Chief of Staff

Official:

ROBERT M. JOYCE Major General, United States Army The Adjutant General

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Change) No. 2) HEADQUARTERS, DEPARTMENT OF THE ARMY Washington, D. C., 1 AUGUST 1984

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Change No. 3

HEADQUARTERS. DEPARTMENT OF THE ARMY Washington, D. C., 7 August 1985

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Official:

DONALD J. DELANDRO Brigadier General, United States Army The Adjutant General



WARNING



EA PD 404264

HIGH VOLTAGE

is used in the operation of this equipment

DEATH ON CONTACT

may result if personnel fail to observe safety precautions

Never work on electronic equipment unless there is another person nearby who is familiar with the operation and hazards of the equipment and who is competent in administering first aid. When the technician is aided by operators, he must warn them about dangerous areas.

Whenever possible, the power supply to the equipment must be shut off before beginning work on the equipment. Take particular care to ground every capacitor likely to hold a dangerous potential. When working inside the equipment, after the power has been turned off, always ground every part before touching it.

Be careful not to contact high-voltage connections or 115-volt ac input connections when installing or operating this equipment.

Whenever the nature of the operation permits, keep one hand away from the equipment to reduce the hazard of current flowing through vital organs of the body.

EXTREMELY DANGEROUS POTENTIALS

greater than 500 volts exist in the following unit: Flight Simulator Group

Warning: Potentials less than 500 volts may cause death under certain conditions. Reasonable precautions should be taken at all times.

For artificial respiration, refer to FM 21-11.

TECHNICAL MANUAL)

No. 9-1430-1256-12-1

HEADQUARTERS, DEPARTMENT OF THE ARMY WASHINGTON, D. C., 7 August 1985

OPERATOR AND ORGANIZATIONAL MAINTENANCE MANUAL:

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^{*}This technical manual supersedes (C) TM 9-1430-1258-12-1, dated 1 December 1981, including change 1.

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APPENDIX

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INTRODUCTION

Section I (U), GENERAL

1-1 (U), Scope

a. (U. This is one of a series of technical manuals on the operation, emplacement, and maintenance of the Allied HERCULES Ar Defense Guided Missile System. Refer to TM 9-1425-1250-L for a listing of DA pubacations applicable to the HERCULES system.

b. (U) This manual is published for the information and guidance of operator and organizational maintenance personnel responsible for adjusting and maintaining the target tracking, target ranging, and missile tracking radar systems and radar test set group of the Allied HER-CULES system after initial emplacement and during normal operation. Also included in this manual are certain special checks to be performed upon initial emplacement as prescribed in TM 9-1430-1251-10 or after replacement of repair parts.

c. (U) This manual is technically correct for al. Adied HERCULES Air Defense Guided Missile Systems provided modification work orders (MWO's) and Contractor Installation Procedures (CIP's) listed on the transmittal sheet of each change have been applied.

1-2 (U). Maintenance Allocation

In general, the prescribed maintenance responsibilities of the organizational maintenance technician and operator apply as reflected in the allocation of tools and repair parts in the supply manuals. Normally, operator maintenance may be performed only under the supervision of a trained organizational maintenance technican. When the nature of repair, modification, or adjustment is beyond the scope of the organizational maintenance technician, the supporting maintenance unit should be informed so that personnel with suitable tools and equipment can be provided

1-3 (U) Nomenclature

A cross-reference index of technical manual and official nomenclature for items of the radia course directing central of the Allied HER-CULES system is provided in TM 9-1430-1251-12-3, TM 9-1430-1256-12/2, and TM 9-1430-1256-12/2.

1-4 (U). Forms, Records, and Reports

Refer to TM 38-750 for instructions on the use and completion of all forms required for operating and maintaining the equipment

1-5 (U). Report of Equipment Publication Improvements

Report of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to DA Publications) and forwarded directly to. Commander, U.S. Army Missile Command, ATTN' DRSMI-SNPMH, Redstone Arsenal, Alabama 35898.

Section II (U) TARGET TRACKING, TARGET RANGING, AND MISSILE TRACKING RADAR SYSTEMS AND RADAR TEST SET GROUP CHECK PROCEDURES

1-8 (U). Scope

a. (U) This manual contains daily, weekly, monthly, nonperiodic, and special checks in tabular form. Performance of the periodic and nonperiodic checks will insure that the equipment is capable of reliable operation. The special checks will be used to determine if the equipment is operating correctly when a part is

replaced. Failure to perform the checks at the intervals specified may result in inefficient operation or failure of the equipment to perform its required function at a critical moment.

b. (U) Connection of the AN/MPQ T1 trainer will affect the performance of checks in some instances. Before performing any check procedures in the radar course directing central.

(RCDC), insure that the trainer is deenergized below the STANDBY condition. If a check does not fall within the specified tolerances after an adjustment is made, manually disconnect the trainer cables and repeat the adjustment to determine the source of the majunction

c. (U) Checks that require monitoring the output of the MTR or TTR receiver may be affected by R.F. interference between the MTR and TTR systems. In order to minimize such interference, insure that the MTR and TTR antennas are not simultaneously aimed at the radar test set mast or other common object.

1-7 (U) Contents

a. (U) The steps in each table must be performed in sequence. All major items, assemblies, and subassemblies are identified by TM nomenclature Proper use of the check procedures tables is described in (1) through (3) below.

Note. All tables, steps, or corrective procedures preceded by an asterisk must be performed by a maintenance technician.

- (1) (U) In using the tables, first perform the operation and observe the indication. If the indication is not within the specified tolerances, perform the adjustment given in the corrective procedure column. If the adjustment does not correct the indication or if an adjustment is not given, a maintenance technician should refer to the functional schematic figure reference provided in the corrective procedure column, Adjustments which are required at more frequent intervals than specified by the check procedures indicate a malfunction. Corrective procedures may reference entire tables or portions of tables. After performing corrective procedures, matre that the switches are reset to their origmal positions before continuing with the procedures.
- (2) (U) In some cases, the test equipment used to perform the checks may be different from that covered in the manual. In these cases, the procedures provided should be con-

sidered typical and used as a guide to perform the checks using the available equipment. The control settings given should provide adequate indications, however, fine adjustments may be made to oh tain optimum indications, Ground or neutral connections used to mointor voltage or current are specified when other than frame or chassis ground is used. When external sync connections are not specified for oscilloscope test connections, the internal sync is to be used

- (3) (U) In localizing a trouble, the maintenance technician should use the appropriate functional schematic diagram. References to the functional schematic diagrams are listed in the corrective procedure column to aid in isolating causes of a trouble. If the applied troubleshooting technique indicates that the probable cause is a component listed in TM's 9 1430-3250-24P-7-1. 9-1430-1250-24P-8-1, 9-1430-1250 24P-10-1, or 9-1430-1250-24P-22-1. replace the component If the component is not listed for organizational repair or replacement, its repair or replacement is reserved for supporting maintenance personnel. When the trouble has been corrected, proceed to the next step.
- b. (U) The periodic check procedures contain the steps to be followed when performing the daily, weekly, or monthly check procedures. The steps must be performed in the sequence iisted, however, each table is written so that it may be performed independently for maintenance purposes.
- c. (U) The nonperiodic check procedures contain checks that do not have to be performed at periodic intervals. These checks will be performed upon initial emplacement as prescribed in TM 9-1430-1251-10, when trouble is suspected in the part of the system to which they apply or prior to any drill or exercise for which a nonperiodic check has been provided.

d (U) The special check procedures contain ing correctly after replacement checks which are to be performed upon initia. emplacement as prescribed in TM 9-1430-1251-10 or when a component is replaced These checks will determine if the system is function-

e. (U_f) All schematic references throughout this manual refer to TM 9-1430-1256-20/3 unless otherwise indicated

CHAPTER 2 (C)

DAILY CHECK PROCEDURES

(U) Table 2.1 Daily Power Checks

UNCLASSIFIED				
Step	Operation	Norther indication	arter, the proceedure	
L	Perform the	ne primary power checks f	or the target tracking radar (TTR) and missile	
	Note The pr	mary power checks are performed wil	in the MAIN POWER switch set to off-downs.	
	a On the ra	idar power control-indicator set	the PHASE switch to C.	
ì		The LINE VOLTS mete	er indicates 120 volts.	
			Adjust the ADJUST PHASE C knob	
			Refer to figure 24	
	b. Set the P	HASE switch to B, then to A		
		The LINE VOLTS med volts at each position.	ter indicates within the limits of 117 5 and 127.5	
			Refer to figure 24	
2.	Perform th	ie primary power checks foi	the target ranging radar (TRR) system.	
	a. On the range radar power control-indicator, set the LINE VOLTS SEL switch to oC		tor, set the LINE VOLTS SEL switch to øC	
			neter indicates 120 voits when the tracking station h two motor alternators or engine alternators.	
			Adjust the ADJUST PHASE C knob.	
			Refer to figure 79.	
			neter indicates within the limits of 117.5 and 127.5 lng station group is operating with one motor iternator.	
			Warning: Before changing phase adjust power switch SI7 connection on the range radar power control-indicator, the motor alternator or engine alternator must be	

Loosen the locking nuts and connect phase adjust power switch S17 to the open position. Tighten the locking nuts. Make phase adjustments on the radar power

control-indicator

deenergized.

b. Set the LINE VOLTS SEL switch to \$B, then to \$A

The LINE VOLTAGE meter indicates within the limits of 117.5 and 127.5 volts at each position.

Refer to figure 79

(U) Table 2.1 Dally Power Checha-Continued

UNCLASSIFIED			
Step	Operation	Marmal indication	Corrective procedure
	unless otherwise in	Coested	solow are occured on the radur power control adicator
3	Perform the ac ;	ower checks for the TTR	and MTR.
			the TEST switch to TEST (up)
		IN POWER switch to ON	
		The TARGET-INTLK	and MISSILE-INTLK indicator lights illuminate
			Refer to figure 31 (MTR).
			Refer to figure 62 (TTR).
		On the range radar po INTLK indicator light i	ower control-indicator, the PLATE VOLTAGE- Illuminates.
			Refer to figure 86
	c. Set the EQ	PT VENT switch to on (u	ıp)
		RGET POWER switch to	
		The TARGET-HIGH	VOLTS-PREHEAT indicator light illuminate
			Refer to figure 63.
		Three TARGET-350V	fuse indicator lights on the fuse panel illuminat
			Refer to figure 55.
		The TARGET-PLAT within 20 to 30 second	E VOLTS—READY indicator light illuminatels.
			Adjust variable resistor R11 on th TTR 20-30-second delay timer.
			Refer to figure 62.
		The TARGET-HIGH minutes +15 seconds.	VOLTS-HOT indicator light illuminates in
			Refer to figure 63
	e. Set the Mi	SSILE POWER switch to	ON.
			VOLTS-PREHEAT indicator light illuminate Refer to figure 32.
		Three MISSILE-350V	I fuse indicator lights on the fuse panel illuminate
		TIMES HINGDIME OVOY	Refer to figure 24.
		The MISSILE-PLAT	E VOLTS-READY indicator light illuminat
			Adjust variable resistor R11 on the MTR 20-30-second delay tuner.
			Refer to figure 31
		The MISSILE—HIGH minutes ±15 seconds.	VOLTS-HOT indicator light illuminates in
			Refer to figure 32

(U) Table 3.1 Dolly Power Checks—Contamied
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Step	Ope	ration	Normal sudication	Corrective procedure
a.	Col	itanued		
	f.	Set the TA	RGET-PLATE VOLTS 64	witch to on (un)
				VOLTS-READY indicator light extinguishes.
				Refer to figure 62
			Three TARGET-350V	fuse indicator lights extinguish.
				Refer to figure 55
			The TARGET—PLATE READY indicator lights	VOLTS-ON and TARGET-HIGH VOLTS-illuminate.
				Refer to figures 55 and 63
			The HV SUPPLY REA power supply illuminate	aDY indicator light on the target track control- s.
				Refer to figure 63
	8	Set the MI	SSILE—PLATE VOLTS sw	ritch to on (up).
			The MISSILE-PLATE	VOLTS-READY indicator light extinguishes.
				Refer to figure 31
			Three MISSILE—350V f	use indicator lights extinguish.
	1			Refer to figure 24
			The MISSILE—PLATE READY andicator lights	VOLTS-ON and MISSILE-HIGH VOLTS-dluminate.
				Refer to figures 24 and 32
			The HV SUPPLY—REA power supply illuminates	
				Refer to figure 32.
	h.	to ON		y, meure that the power ON-OFF switch is set
	*	On the ma	sile track and target track	control-power supplies, set the IND HV switches
			The IND HV indicator l	ights on both control-power supplies illuminate
				Refer to figure 27 (MTR) or 63 (TTR).
	No indic	te Ali contro	ls and indicators in step 4a an	d b below are located on the range radar power control-
4.	Perf	orm the ac	power checks for the TRR	
	a,	Set the TR	R POWER switch to ON	
			The HIGH VOLTAGE-1	PREHEAT indicator light illuminates.

Refer to figure 87.

(U, Table 2-1, Daily Power Checks—Continued UNCLASSIFIED

Step	Operation	Normal indication	Corrective procedure
4,	Continued		
	•	Three +350V POWER S	SUPPLY fuse indicator lights illuminate
			Refer to figure 79.
		The PLATE VOLTAG	E READY indicator light illuminates within 20
			Adjust variable resistor R11 on the TRR 20-30-second delay timer
			Refer to figure 86
		The HIGH VOLTAGE seconds.	-HOT indicator light illuminates in 5 minutes + 13
			Refer to figure 87.
	b. Set the P	LATE VOLTAGE switch t	о ол (цр).
			ESSURE indicator light illuminates after a shor
			Perform the TRR procedures in tabl
			2-2, steps 15 through 4.
			Refer to figure 87.
		The HIGH VOLTAGI	E-READY A and HIGH VOLTAGE-READY
			Refer to figure 87
		The PLATE VOLTAG	E-READY and PLATE VOLTAGE-INTLK ind
		•	Refer to figure 86.
		Three +350V POWER	SUPPLY fuse indicator lights extinguish
			Refer to figure 79.
		The PLATE VOLTAG	E ON indicator light illuminates.
		•	Refer to figure 86
	g. Observe	the countermeasures contr	ol-inducator.
		The MAG A-READY	and MAG B-READY indicators illuminate.
			Refer to figure 87.
5.	Perform the i	inal radar line voltage chec	k,
٠,	a, On the		stor, set the PHASE switch to C and observe th
		The LINE VOLTS me	ter indicates 120 volts.
			Adjust the ADJUST PHASE C knob
			Refer to figure 24
	b. Set the	PHASE switch to B, then to	. A

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(U) Table 2-1. Daily Power Checks-Continued

Step	0,0	ration	Normal inducation		Comective procedure		
5	Co	ntinued			·		
			The LINE Vo	OLTS meter in switch position	dicates within the limits of 117.5 and 127.5		
					Refer to figure 24		
	a.		HASE switch to (
	d	On the r	ange radar power	controindicat	or, set the LINE VOLTS SEL switch to oC		
			The LINE VO	OLTAGE meter	indicates 120 volts when the tracking station note: alternators or engine alternators.		
					Adjust the ADJUST PHASE C knob.		
					Refer to figure 79.		
			127.5 volts w	OLTAGE mete hen the tracking engine alternate	r mdicates within the limits of 117.5 and ag station group is operating with one motor s.		
					Refer to figure 79		
	ę	Set the L	INE VOLTS SEL	switch to oB, t	hen to &A.		
			The LINE V		r indicates within the limits of 117.5 and		
					Refer to figure 79.		
	f.		INE VOLTS SEL		•		
6	Peri	Perform the dc power checks for the TIR.					
	a.	TWERFT	-		t the VOLTS CHECK MISSILE switch to		
	b	orien pric. A	OP12 CHECK WITH	ever moreations	ch to the positions indicated, and observe s are in the segments specified below.		
		Note Ch adjustment	eck all positions of s. For any apparent	f the VOLTS (maifunctions, ref	HECK-TARGET switch before performing any er to figures 58 and 59		
		(1)	+1550	1/4			
		(2) (3)	-250 -320	3/4	0. 11. 1		
		(0)	020	3,4	On the lower 2320V, +220V power supply in the lower left section of the radar power supply group, adjust the V ADJ SEC 2 (— or +) variable resistor		
		(4)	LVPS	1/4	Perform the procedures in table 5-30, step 2		
		(6)	+220T	3/4			
		(6) (7)	-250T	3/4			
	,	.*7	T ANT	1 4	Perform the procedures in table 5-30, step 9 (TTR)		

(U) Table 2.1 Daily Power Checks-Continued

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Stap	Operation	Normal indication		Corrective procedure
6.	Continued			
	(8)	+150T	3/4	
	(9)	+250T	3/4	
	(10)	+320T	3 4	On the upper *320V, *220V powe supply in the lower left section of the radar power supply group, adjust the V ADJ SEC 1 (+) variable resistor
	(11)	+450	3,4	On the +450V and +250V power sup ply, adjust the +450V ADJ variable resistor
	(12)	+270		The indication shall not exceed 3/16 inc right of the white block.)
	(13)	−28A	14	*Move the secondary tap on transformed. TI in the -28V power supply on the side in the upper right front of the tradar power supply group. (Higher tanumbers produce higher voltages.)
	(14)	28C	1/4	*Move the secondary tap on tran former T1 in the 28V power suppl on the slide in the upper left front of the TTR console. (Higher tap number produce higher voltages.)
	(15)	OFF		

7.

Perform the dc power checks for the MTR

a On the radar power control indicator, set the VOLTS CHECK-MISSILE switch to the positions indicated, and observe that the VOLTS CHECK meter indications are in the segments specified below.

Note: Check all positions of the VOLTS CHECK: MISSILE switch before performing any adjustments. For any apparent malfunctions, refer to figure 28

(2)	-320	3/4	On the lower +320V, +220V power supply in the lower left section of the radar power supply group, adjust the V ADJ SEC 2 { or +) variable resistor.
(3)	LVPS	1/4	Perform the procedures in table 5-30, step 3
(4)	+220M	3/4	On the lower ±320V, +220V power supply in the lower left section of the radar power supply group, adjust the

V ADJ SEC 1 (+) variable resistor

(U) Table 2-1 Daily Power Checks—Continued
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Step	Operation	Normal andlesses		Corrective procedure
7	Continued			
	(6)	-250M	3/4	
	(6)	M ANT	1/4	Perform the procedures in table 5-30 step 9 (MTR)
	(7)	+160M	3/4	
	(8)	+260M	3/4	
	(9)	+320M	3/4	On the upper ±820V, +220V power supply in the lower left section of the radar power supply group, adjust the V ADJ SEC 2 (— or +) variable resistor
	(10)	+450	8/4	On the +450V and +250V power supply, adjust the +450V ADJ variable resistor.
	(11)	+270		The indication shall not exceed 3/16 incl right of the white block.)

Or Table 2-1 Dails Power Clacks: 4.50, much

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Step	Орегании	Normacisaliciticon		Corr & privather
7.	Continued			
	12)	-28B	1/4	"Move the secondary tap on transformer To in the 270% 28V and +75% or +175% power supply in the radar power supply group. Higher tap numbers produce higher voltages.)
	(13)	TARGET		

6 On the MTR and TTR RSPU front panels, set the MODE switches to MNL, then OPR Fault LED's (decimal points at extreme left) on the coordinate displays

are extinguished.

- (1) In the director station, verify that the computer POWER switch is set to ON
- (2) Perform the procedures in table 3-5.

8. Perform the de power checks for the TRR.

On the range radar power control indicator set the VOLTS CHECK switch to the positions indicated, and observe that the VOLTS CHECK meter indications are in the segments specified below

Note Check a I pass, and of the VOLTS CHECK awards before performing any adjustments. For any apparent melfunctions, refer to figure 80.

g.	ANT	1/4	Perform the procedures in table 6-30, step 10
ь,	+5	1/4	Perform the procedures in table 5-30, step 6
C.	-250	3/4	
d.	-320A	3/4	On the right power supply in the lower left section of the TRR con- trol cabinet, adjust the V ADJ SEC 2 (- or +) variable resistor
e.	+150	3/4	
[E	+250	3/4	
g.	+ 220	3/4	On the right power supply in the lower left section of the TRR control cabinet, adjust the V ADJ SEC 1 (+) variable resistor
h.	- 320 B	3/4	On the left power supply in the lower left section of the TRR con- trol cabinet, adjust the V ADJ SEC 2(or +) variable resistor.

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÷tωρ	Bero on	Source a reducation		a valifor date
8.	Continued			
	Ł.	+320	3/4	On the left power supply in the lower left section of the TRR con- trol cabinet, adjust the V ADJ SEC 1.+. variable resistor
).	28V/E	1/4	*Move the secondary tap on transformer T1 in the -28V power supply on the far left slide in the front of the TRR control cabinet. (Higher tap numbers produce higher voltages.
	k.	+15V	1/4	Perform the procedures in table 5-30, step 6.
	L.	-16V	1/4	Perform the procedures in table 5-30, step 6
	171	OFF		

Us Table 2-2 Daily Premarization and Dehamidification Checks-TTR, MTR, and TRR

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		THE STATE OF THE S	
9toyu	Operation	Normal indication	Latrictive procedure
	Note This p	recedure is apprentile to the TPR, MPR,	una TIOC as ng the controls and andicasors peculiar to each
t.	Prepare fo	r the pressurization and dehi	ımıdification checks.
- 1	a. Perform	the procedures in table 2-1 1	
	b At the Ti	RR, MTR, or TTR antenna suppor	t base, set the ANTENNA switch to DISABLE
	c On the T	RR MTR or TTR antenna pedest	al, set the BLOWER switch to OFF
2.	Check the	pressurization unit.	
	a On the co	empressor insure that the power (ON OFF switch is set to ON
		The POWER indicator li	ght is illuminated.
			Refer to figure 16 (MTR).
			Refer to figure 47 (TTR).
			Refer to figure 73 (TRR).
	b. Observe	one cycle of the pumping operation	n
		The motor operation (pt MTR	imping) time does not exceed 4 minutes (TTR or
			Refer to figure 16 (MTR).
			Refer to figure 47 (TTR).
		The motor operation (pr	imping) time does not exceed 2 minutes (TRR).
			Refer to figure 73 (TRR,,

*Oracl shoustep if the clocks in the preceding table have been performed in sequence

(L) Table 2-2 Daily Pressurization and Dehumidification Checus-TTR MTR and TRR. Commund

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Stop	Operation	Normal indication	Corrective procedure
2.	Continued		
		The pressure meter indic	ates within the limits of 9 and 17 (M FR and TFR).
ļ			Perform the procedures in table 3-1, steps 1b and 2 (TTR and MTR)
		The waveguide pressure the limits of 17 and 25 (meter in the receiver-transmitter indicates within TRR).
			Perform the procedures in table 3-1, steps 1b and 3 (TRR)
3.	Check the den	umıdifier,	
]	a. Observe (the indicator lights on the de	humidifier
		On the TTR and MTR. indicator lights are illum	, the 115V 400CY ON and the 28VDC-ON insted.
ŀ			Refer to figure 16 (MTR),
			Refer to figure 47 (TTR)
	b. Observe t	the HUMIDITY INDICATOR	R.
		The HUMIDITY INDICA	ATOR is dark blue
			Perform the procedures in table 8-1 (MTR, TTR, and TRR)
4.	Return the eq	apment to normal operation	1,
	a. On the T	RR, MTR, or TTR antenna	pedestal, set the BLOWER switch to ON
	b. On the 'NORMA		na support base, set the ANTENNA switch to

²Omit this step if the cheeks in the succeeding tables are to be performed in sequence

(U, Table 2-3. Daily Leveling Checks-TTR, MTR, and TRR

Step	Operation	Normai Indication	Corrective procedure	
	Note. This procedure is the same for TRR MTR, and TTR using controls and indicators peou each. This procedure is performed during a period of low compensative gradient fearly morning obtain greater accuracy from the levels, approach all readings on the counter with the same direct rotation on the level knobs. One man should take all readings for any one level appetation.			
1.		the level check.		
	a. Per	form the procedures in table 2	4.	
	b Qn	the antenna support base, set	the ANTENNA switch to DISABLE.	
	c Install the local antenna controls on the missile track and target track antennas of antenna test set on the target range antenna, and set the CONTROL switch to A			
	d. Set	the ANTENNA switch to NO.	RMAL,	
		ng the local antenna control, unsit) lock.	aune a latch recess with the azimuth antirotational	

^{*}Omit this step if the checks in the preceding tables have been performed in sequence

(U) Table 2-3 Daily Levering Checks-TTR MTR and TRR Continued

		0110000011	
Stop	Operation	Nottan indirectors	Cerrockiv photoduce
1.	bubble in g Record to h, Using the Adjust th bubble in g Record to k. Perform	ne level knobs on levels A (right and B in each level is alined ne counter indications on each level. De elocal antenna control, rotate the antene level knobs on levels A knight) and B in each level is abined.	seft) on each antenna until the split image of the signate the indications A_z and B_1 nna 3,200 mils in az muth. Left on each antenna until the split image of the signate the level dial indications A_z and B_z .
	(2) B ₁ -	B ₂ = difference	
		Each difference in (1) and (2)	
			(a) On the antenna, adjust the level knob on each level so that the counters indicate halfway between the two indications of A ₁ and A ₂ and
			B ₁ and B ₂
			(b) Loosen the two jack-locking knobs and ascertain that the pins are free by pressing on the ack-locking knobs.
			(c) Adjust the leveling jacks on each antenna until the split image of the bubble in each layel is alined.
			(d) Using the local antenna controls, rotate the antenna 3,200 mile in azimuth.
			(c) Adjust the level knobs until the split image of the bubbles are slined. The counter indi- cation should not differ from the indication set in (a) above by more than 3 divisions, oth- erwise, repeat the procedures
			in (α) through (e) above
			(f) Tighten the two jack locking knobs.
2.		antenna to normal operation.	
	b. Remove t. range ant	NTENNA switch to DISABLE. he local ant anna controls from the TTF tenna. NTENNA switch to NORMAL.	t or MTR, or the antenna test set from the target

Step

Operation

Corrective procedure

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(U) Table 2-4. Datty Presentation Checks-TTR

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Normal indication

1.	Pi	repare for the TTR present	ation checks.					
	a.		m table 2-1					
	b	On the target track contr	o power supply, set the sv	vitches as indicated				
		Switch	Setting	- recited the midicaped				
		TTR PULSE WIDTH	SHORT					
		TRR PULSE WIDTH	SHORT					
		AGC-MANUAL IND	AGC R					
	d	Set the TTP renge to an	ntrol group, set the AGC-	LIN LOG switch to AGC				
	e	On the elevation or mu	proximately 20,000 yards,					
		2		otate the SWEEP LENGTH controls				
	7.	01 2401111		y that the TEST OPERATE switch				
2.	Ch	eck the elevation, azimuth	, and range indicators.					
	a.	Observe the upper sweeps	on the elevation, azimuth	and range indicators				
	Ohserve the upper sweeps on the elevation, azimuth, and range indicators. The presentations are focused and well defined.							
				(1) On the indicators, adjust the				
				INTENSITY and FOCUS				
- 1				controls.				
				(2) On the target sweep genera-				
				tor, adjust the ASTIGMA TISM control Readjust the				
				FOCUS control if necessary				
				Refer to figure 51.				
		Receiver nois	e is present,					
- 1				Perform the procedures in table				
- i		The aurenda	*	2-9, steps 1 through 3a				
ŀ	The expanded area of the sweep and the short pulse range notch are approximately centered in the middle of the sweep.							
				Perform the procedures in table 5-10.				
		The sweep lengths are approximately 4 inches long.						
				Perform the procedures in table				
	ь	Observe the lower success	CAL1	5-TB				
		A cutom to	f the elevation and azimuth	indicators				
		sweep.	resent and is approximat	ely 1-1/2 inches below the upper				
				Perform the procedures in table 5:10.				
	_							

[‡]Omit this step if the checks to the preceding tables have been performed in sequence

(U) Table 2-5. Daily Transmitter Checks-TTR

Step	Operation	Normai Indication	Corrective procedure
1.	Prepare for the TTR transmutter checks.		
	Note Wheney on the top pane,	er the larget rack control power so of the larget track control power so	pply has been replaced, rounte all six variable resistors pply (u.ly down to prevent damaging the magnetion

(U) Table 2-5 Daily Transmitter Checks-TTR-Continued

Step	Operation	Normal statics ion	Cornectivo procedure		
ī.	Continued				
	a. Perform the procedures in table 2-1				
	11M 3-140U-	1200-12-1 and set the LOPAR—H	OPAR as prescribed in the power checks in PAR AAR switch to LOPAR.		
	Note All contro otherwise indicate	is and indicators in steps 2 through 5 beto d.	ware located on the target track control-power supply unless		
2,	Check the op	eration of the magnetron.			
	a. Set the TTR PULSE WIDTH switch to SHORT Operate the FREQUENCY switch to on tain a midscale reading on the FREQUENCY meter				
	b. On the targe the MP switz	t antenna control group, insure tha ch	t the MULTI BIN switch is set to OFF and depress		
		The MP -ON indicator I illuminates.	ight on the pulse generator-indicator		
	_		Refer to figure 66.		
	c. Rotate the H	V SUPPLY knob to START and de	press the HV SUPPLY ON switch.		
		The HV SUPPLY—READY SUPPLY—ON indicator light	indicator light extinguishes, and the HV		
ĺ			Refer to figure 63.		
		On the radar power control PREHEAT, HOT, and REAI extinguish.	indicator, the TARGET—HIGH VOLTS— PY, and TARGET—INTLK indicator lights		
			Refer to figure 63		
		The TARGET—HIGH VOLT control-indicator illuminate	S—ON indicator light on the radar power		
			Refer to figure 63.		
	d Adjust the H MAGNETRO	un meter	dication in the center of the white block on the		
	The MAGNETRON meter indicates in the center of the white block.				
			Perform the procedures in table 5-14. Check the magnetron HV power supply diodes.		
			Refer to figure 63.		
	e. Operate the N	AGNETRON switch to KV FS=			
		The MAGNETRON meter inc	licates between 11, and 16 kv.		
			Perform the procedures in table 5-14.		
			Refer to figure 47		
	7. Operate the N	IAGNETRON switch to MA FS=	100.		

^{*}Orall this step if the checks in the proceeding tables have been performed in sequence.

(U. Table 2-5. Daily Transmitter Checks-TTR-Continued

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Blap	Operation	Nurmal styluration	Correct + providure			
2.	Continued					
D)	Odiminaca	The MAGNETRON meter if	ndicates between 60 and 72 ms.			
		••••	Perform the procedures in table 54			
			Refer to figure 47			
	a On the ten	get antenna control group, depresa	the MP switch.			
	g ()1 (1)() and	The MP—ON indicator light illuminates.	ht extinguishes, and the MP-OFF indicates			
			Refer to figure 65			
		The MACNETRON meter i	ndicates in the center of the white block.			
		IN MANUELLES CONTROL	Adjust variable transformer T located on the right side of th target track control-power			
			target track controt-powe			
			Refer to figure 63.			
		AND CANDED ON comboh to KV FS	= 20.			
	h. Operate the MAGNETRON switch to KV FS = 20. The MAGNETRON meter indicates between 11 and 16 kv.					
		The MAGNETRON mover	Refer to figure 47			
	Onerate th	ne MAGNETRON switch to MA FS	S = 100.			
	· Operation	The MAGNETRON meter	indicates between 11 and 14 ma.			
		***************************************	Refer to figure 47			
	i. Set the T	TR PULSE WIDTH switch to LON	G			
	3. 4	The MAGNETRON meter	indicates near the center of the white block			
			Adjust LP LP variable resist (R22) on top of the target tra- control-power supply.			
			Refer to figure 63.			
	h. Operate the MAGNETRON switch to KV FS = 20. The MAGNETRON meter indicates between 10 and 16 kv.					
			Refer to figure 47.			
	1. Operate the MAGNETRON switch to MA FS = 100					
	s. Ophiko	The MAGNETRON meter	Indicates between 55 and 65 ms.			
			Refer to figure 47.			
	m On the to	arget antenna control group, depres	es the MP switch			
	W 011 010 M	The MP—OFF Indicator light illuminates.	light extinguishes, and the MP—ON indica			
		HERE STATEMENT OF THE PARTY OF	Refer to figure 65.			

10. Table 2-6. Daily Transmitter Checks-TTR-Continued

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Step	C pression	Normal indication	Correc or procedure		
2,	Continued				
		The MAGNETRON meter indi	cates near the center of the white block		
			Adjust MP LP variable resists (R17) on top of the target trac control-power supply		
	n. Operate	the MAGNETRON switch to KV F	Refer to figure 63		
	· · · · · · · · · · · · · · · · · · ·	The MAGNETRON meter and			
		the state of their			
	o. Operate	the MAGNETRON switch to MA F	Refer to figure 47,		
		The MAGNE FRON meter indi			
			Perform the procedures in table		
			5-14.		
ľ	- 0-45.4		Refer to figure 47		
	p On the ta	rget antenna contro, group, depres			
		The MP-OFF indicator light ill			
3	Check the on	eration of the magnetron in range :	Refer to figure 65		
	a. Set the T	TR PULSE WIDTH switch to SHO	tero.		
	On the target antenna control group, set the MULTI BIN switch to ZERO On the target antenna control group, depress the MP switch				
			extinguishes, and the MP-ON indicator		
			Refer to figure 65		
		The MAGNETRON meter indic	ates near the center of the white block		
			Adjust MP RZ SP variable resistor (R14) on the top of the target track control-power supply		
	4 0		Refer to figure 63		
	a. Operate th	e MAGNETRON switch to KV PS			
		The MAGNETRON meter indica			
	e Oncrate th	a MACA PERON	Refer to figure 47		
	c Obcieté fu	e MAGNETRON switch to MA FS			
		The MAGNETRON meter indica	ites between 9 and 12 ma.		
			4s. H		

Refer to figure 47.

(U) Table 2-5 Daily Transmitter Checks-TTR-Continued

UNCLASSIFIED						
Step	Operation	8 mai indicators	Corrective movedure			
3.	Continued					
	/. Set the T	TR PULSE WIDTH switch to LO	NG.			
		The MAGNETRON meter me	dicates near the center of the white block			
			Adjust MP RZ LP variable resistor (R15) on the top of the target track control-power supply			
			Refer to figure 63			
1	g. Operate	the MAGNETRON switch to KV	FS = 20.			
	B		dicates between 10 and 15 kv			
			Refer to figure 47.			
	h. Operate	the MAGNETRON switch to MA	FS = 100.			
			dicates between 47 and 55 ma.			
			Refer to figure 47			
	i On the t	arget antenna control group, oper	rate the MP switch			
		The MP-OFF indicator light				
			Refer to figure 65			
	J. Set the	MULTI BIN switch to OFF.				
	Note On s	stems not equipped with HIPAR or if	the HIPAR is inoperative, omit step 4 below			
4.	Check the o	Check the operation of the magnetron in the HIPAR mode,				
-	a. Venfy	that the HIPAR METER SHUNT IS set to the PRF of the site HIP	AT switch on the remote magnetron control-			
	b Have th	e LOPAR operator set the LOPAI	R HIPAR, AAR switch to HIPAR, AAR			
	c. Set the	TTR PULSE WIDTH switch to Si	HORT			
		The MAGNETRON meter is	idicates near the center of the white block			
			Adjust HP SP variable resistor (R19) on top of the target track control-power supply			
			Refer to figure 68			
	d. Operate	the MAGNETRON switch to KV	/ FS = 20.			
		The MAGNETRON meter u	ndicates between 11 and 16 kv			
			Refer to figure 47.			
	e. Operate	the MAGNETRON switch to MA	A FS = 100			
		The MAGNETRON meter u	ndicates between 9 and 12 ma.			
			Refer to figure 47.			
	f. Set the	TTR PULSE WIDTH switch to L	ONG			
	•					

(U) Table 2-5, Daily Transmitter Checks-TTR-Continued

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Step	Operation	Normal indication	Corrective procedule
4	Continued		
		The MAGNETRON m	eter indicates near the center of the white block
			Adjust HP LP variable resistor (R20 on top of the target track control power supply Refer to figure 63
	g Operate	the MAGNETRON switch t	o KV PS = 20
			ter indicates between 10 and 15 ky
	// Operate	the MAGNETRON switch t	Refer to figure 47
			ter indicates between 47 and 55 ma.
5.	Deenergize th	ne TTR transmitter 2	Refer to figure 47
	Rotate the H	V SUPPLY knob to START	and depress the HV SUPPLY-OFF switch

³Omit this step if the checks in the succeeding tables are to be performed in sequence

(U) Table 2-8 Daily Target AFC Checks-TTR

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			MCLASSIFIED	
Step	Operation	Normal Indication		Contective procedure
1.	Prepare for t	he target AFC check		
		the procedures in i		
	b On the SHORT	target track control	ol power supply, s	et the TTR PULSE WIDTH switch to
	c On the	target antenna contr	ol group, set the sv	witches as indicated
	St	vitch	Setting	
	TEST		TEST	
		IN-LOG	AGC	
	MULTI	BIN	ZERO	
	d. Set the	TTR range to less th	an 20,000 yards	
2.	Energize the TTR transmitter,			
	On the targe depress the E	track control pow	tch Adjust the E	the HV SUPPLY knob to START and HV SUPPLY knob to obtain an indica- e block
3.	Check target	AFC operation.		
	Note Al con	tros and indicators are	located on the target or	rear voltage monitor unless otherwise indicated
	 a. Set the i 		itch to ADJ, the I	RCVR TEST switch to XTAL and the

Omit this step if the checks in the proceeding Lables have been performed in sequence

(U, Table 2-6. Daily Torget AFC Checks TTR-Cononuec

JNCLASSIFIED

t De Parker In	Хоттон стыг а ты	Core de broredi e		
Continued				
	The RCVR TEST meter indicates beta	ween 30 and 100.		
		Perform the procedures in table 2		
b. Operace th	ie BEACON, TARGET Switch to BEACO	DN and then to PARGET		
	In the BEACON position, the TA illuminated	RGET AFC LOCK indicator is no		
	The TARGET AFC LOCK indicator the switch is set to TARGET	illuminates within one second after		
		Perform the procedures in table 5-1		
Note. While performing the procedures of a below insure has there and value present in the range notch				
c. On the target track control power supply, set the TAR PULSE WIDTH switch to LONG				
	The TARGET AFC LOCK indicator re	emains illuminated,		
		Perform the procedures in table 5-1		
	Stable range zero pulses are present conducator	in the apper trace of the target range		
		Perform the procedures in table 5-1, steps 15 and 16,		
	On the upper sweep of the elevation transmitter pulse amplitude is between	, azimuth, and range indicators, the land 1-1/4 inches.		
		Perform the procedures in table		

5-10, step to and f. STETS 4.d. 90 4.c.

d. On the target track control-power supply, operate the PREQUENCY switch to vary the magnetron frequency over the entire range

The TARGET AFC LOCK indicator remains illuminated

Perform the procedures in table

- Return the magnetron frequency to the assigned operating frequency. If no frequency is assigned, return the magnetron frequency to midscale
- On the target antenna coptrol group, set the MULTI BIN switch to OFF
- Position for anienna to option video on the upper case of the target range indicator
- h. On the target track control power supply, operate and hold the RF INTERR, PT 8Willeh

On the target track control power supply, the MAGNETRON meter indication remains steady in the white black

Refer to figure 65

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(1) Table 2.6. Daily Target AFC Checks- TTR: Continued

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Sien.	Catetal in o	Normal Infinator	portective procedure
3	Continued		
		The TARGET AFC LOCK and	icator remains illuminated
1			Refer to figure 49
-		The video on the upper swe	ep of the target range indicator disappears.
			Refer to figure 65
	i. Reiease	the RF INTERRUPT switch	
		The video reappears on the up	per sweep of the range indicator
			Refer to figure 65
4.	Deenergize t	he TTR transmitter,	
	On the targe depress the l	et track contro power supply to IV SUPPLY—OFF switch	tate the HV SUPPLY knob to START and

(U. Table 2-7 Daily Reacon AFC Checks-TTR

iten	()	terasion Normasir mat	di o sortee we procedure		
1	pı	repare for the beacon AFC	checks,		
ſ	g. Perform the procedures in table 2-1				
	b	On the target antenna co	ontrol group, set the switches as indicated		
		Switch TEST MULTI BIN RANGE TRACK AGC—LIN-LOG	Setting TEST OFF TTR AGC		
	c. On the target test control, set the switches as indicated				
		Switch SIGNAL LEVEL FREQ SELECT MODE PL LSES	Setting 00 REMOTE PULSE SINGLE		
	d	On the target track contr	rol-power supply, set the switches as indicated		
		Switch AGC-MANUAL TTR PULSE W.D.TH	Setting AGC SHORT		

Omit this step if the checks in the preceding tables have been performed in sequence.

(U) Table 2-7 Belly Beacon AFC Checks—TTR—Continued UNCLASSIFIED

Lep	Operation	Normá Indiention	Corrective procedure
1,	Continued		
	e On the target error voltage monator, set the switches as indicated		
	S	witch	Setting
	(IF TES	st)adj test	ADJ BIAS
	BEACO	N-TARGET	BEACON
	PRESE	ī.	1
	f On the l	IF test generator, ve	erify that the OSC switch is set to OFF

2. Acquire the radar test set.

On the target error voltage monitor, momentarily operate the SWEEP PRESET switch
 The SWP CENTER indicator is illuminated.

Refer to figure 50.

- a.1 On the target track control-power supply, set the IND switch to A
 - Position the TTR antenna to the azimuth and elevation coordinates of the radar test set.

Note: All switches, controls, and meters are located on the target error voltage monitor unless otherwise adicated

c. On the missile control indicator group, set the TARGET STANDBY-MISSILE switch to TARGET

Note. The procedures in a through h below can be disregarded. If the signal from the radar test set is visible on the range indicator.

- d. (Deleted)
- e. On the target test control, set the MODE switch to CW
- f Position the PRESET 1 COARSE control maximum clockwise Position the FINE control to approximately the middle of the adjustment range
- g Slow,y adjust the PRESET 1 COARSE control counterclockwise while observing the RCVR TEST meter for a bias voltage .ncrease Adjust the control for near maximum bias voltage.
- On the target test contro., set the MODE switch to PLLSE

The pulse from the radar test set is visible on the range indicator,

Refer to figure 50

- Set the TTR range to within 8,000 yards of the range of the radar test set
- . On the target track control-power supply, set the IND switch to R
- k On the target antenna control group, set the MULTI BIN switch to ON and the range MAN ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID

Step

2.

Operation

b

switch to STANDBY

Continued

Corrective procedure

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(U) Table 2-7 Daily Beacon AFC Checks-TTR-Continued

UNCLASSIFIED

Normal indication

		The pulse from the radar test set is centered in the range notch.
		Perform the procedures in table 5-3, and repeat the procedures in steps 1 and $2a$ through k above
		Refer to figure 54.4
	1	Set the RCVR TEST switch to AFC and adjust the PRESET 1 COARSE control to obtain an indication between 45 and 55 on the RCVR TEST meter
	m	Hold the AFC SENS switch in the HI position and slowly adjust the FINE control for an indication of 50 on the RCVR TEST meter
	an-	vote. If the adjustment range of the FINE control is insufficient position, he control to midrange direadjust the PRESET 1 COARSE control
	n.	Release the AFC SENS switch
3.	Be:	acon AFC operation checks.
	a,	Observe the range indicator
		A stable radar test set short pulse signal is centered in the range notch
		Perform the procedures in table 4-4.
	ь,	Observe the AFC LOCK indicators
		The BEACON indicator is illuminated
		Refer to figure 50
	¢	On the target track control-power supply, set the TTR PULSE WIDTH switch L-LONG
	d	Hold the AFC SENS switch in the HI position and slowly adjust the FINE control to obtain an indication of 50 on the RCVR TEST meter. Release the switch. A stable radar test set long pulse signal is present on the range indicator. The pulse is centered in the range notch.
		Perform the procedures in table 4-4
4.	Ree	establish the switch positions.
	a.	On the target antenna control group, set the MULTI BIN switch to OFF and the

range MAN ACQUIRE AID TRACK AID-AUTO switch to MAN

On the missae control-indicator group, set the TARGET STANDBY MISSILE

(U) Table 2-7 Daily Beacon AFC Checks-TTR-Continued
UNCLASSIFIED

Scen	Operation	Normal net camon	Соггесция рессиона	
4.			IGNAL LEVEL switch to 70 BEACON TARGET	

		_		Doily Runge System Chechs TTR ONFIDENTIAL		
Step	Oper	wtion	Normal Ind. cation	Corrective prucedure		
1.	Pre	epare for th	he TTR range system	checks.		
	ar.	Perform	the procedures in ta	ible 2-1		
	b	On the t	target antenna contro	p. group, set the switches as indicated		
			itch	Setting		
		TEST RANGE AGC -L MULTI		TEST TTR AGC OFF		
	c	On the t	arget track contro. p	ower supply, set the switches as indicated		
			witch	Setting		
		AGC-M TTR PUI	ANUAL LSE WIDTH	AGC SHORT R		
	d.	On the t	arget error voltage n	non-ton set the BEACON TARGET switch to TARGET		
	e	On the T	TR RSPU set the C	OORD SELECT switch to D-FCN		
2.	Che		ge gate operation			
	a	On the t		d group, operate the SLEW switch to slew the range from		
		The expanded area of the sweep and the range notch on the elevation azimuth, and range indicators move smoothly from 0 to 20,000 yards				
			779	Refer to figure 54 4		
			The expanded a the range indicat	area of the sweep and the range notch remain stable on or throughout the entire 20,000 to 200,000 yards.		
				Refer to figure 54.4		
	a I	On the ta		ower supply, set the IND switch to A		
*	a?	ON THE	The sweep exten	ds 1/4 inch beyond the expanded area Cante worch		

Om t this step if the checks in the preceding tables have been performed in soquence

(U) Table 2-8. Doily Range System Checks-TTR-Continued

		CONFIDE	ENTIAL		
Stup	Upration	Normal institution	Corrective pencedure		
2.	Continued		the Court of the second of the		
			 On the target sweep generator in the target range indicator, adjust the MAX SWEEP RANGE control. 		
			(2) Refer to figure 51		
	b. Operate	the SLEW switch to set the	range to approximately 20,000 yards.		
3.	Energize the	transmitter in the short puls	e mode.		
	er On the	target track control power resa the HV SUPPLY ON s	supply, rotate the HV SUPPLY knob to START witch		
	b Adjust I	the HV St PPLY knub to o neter white block and note:	blain an indication in the center of the MAGNE- the indication on the FREQUENCY meter		
	Note The man	me method of performing the r shod) must be used for the TTR	ange zero procedures (known datum point (KDP) or range MTR, and TRR. The methods must not be intermixed		
4.	Check the Ti	Check the TTR range zero in the short pulse mode using a KDP.			
	Note. If a st	Note. If a surveyed KDP is not available, proceed to step 8 helow			
	a Position	the TTR antenna to the co-	ordinates of the KDP		
			e KDP signal in the range notch.		
	AID-A	target antenna control grou UTO switch to AUTO So to AUTO.	up, set the range MAN ACQUIRE AID-TRACK the elevation and azimuth MAN-AID AUTO		
		The elevation and azu	muth coordinates and range indication are stable.		
			Select a different KDP		
		The RSPU COORD D	ISPLAY indicates the surveyed range to the KDP		
			On the TTR RSPU, adjust the SHORT PULSE DELAY thumbwheel switches and momentarily depress the ENTER switch until the KDP range is indicated. Record the SHORT PULSE DELAY thumbwheel switch settings		
6.	Check the T.	PR range zero in the long pu	the mode using a KDP.		
	a On the LONG	target track control-power	supply, set the TTR PULSE WIDTH switch to		
		The MAGNETRON m	eter indication is in the center of the white block.		

The MAGNETRON meter indication is in the center of the white block.

Adjust the HV SUPPLY knob on the target track control-power supply.

The elevation and azimuth coordinates and range indication are stable. Select a different KDP

(U) Table 2-8 Daily Hange System Checks -TTR- Continued
CONFIDENTIAL

			OMFIDENTIAL	
Step	Operation	Normal indication	Corrective procedure	
5.	Continued			
		The RSPU CO	ORD DISPLAY indicates the survey	ed range to the KDP
			PULSE DELAY and momentarily switch until the K. Record the LO thumbwheel switch	
	b On the AUTO s witch t	switches to ALAN an	tro, group, set the elevation and a d the range MANHACQUIRE ALD	zmath MAN AID TRACK AID: A TO
6.	Check the range zero in the MP short pulse mode			
	a. On the \$HORT	target track control	power supply, set the TTR PUGS	E WIDTH switch to
	b On the p	ulse generator-indic	itor, set the switches as indicated	
	St	witch	Setting	
	PRE-KN	UN—STOP OCK —1—2—3	RUN NORM JITTER	

(U) Table 2-8 Daily Range System Checks—TTR Consumed CONFIDENTIAL

hop	Operation	Hermil indication	Convertive percedure			
6.	Continued					
	c On the ta	urget antenna control group, set the J	MULTI BIN switch to ZERO and depress the M			
		The MAGNETRON meter in	dicates in the center of the white block.			
			Adjust the HV SUPPLY knob of the target track control-powers supply			
		The MP—ON indicator on t	he pulse generator-indicator illuminates. Refer to figure 65.			
- 1		At least 15 stable range zero	pulses are present on the range indicator.			
			Perform the procedures in table 2-6.			
1	d. Set the TI	d. Set the TTR range to center the eighth range zero pulse in the range notch.				
ı	 Set the range MAN ACQUIRE AID TRACK AID—AUTO switch to AUTO. Note and record the indication on the RSPU COORD DISPLAY Designate this indication as D_x. 					
-	f. Set the range MAN—ACQUIRE AID.—TRACK AID. AUTO switch to MAN					
1	g. Set the TTR range to center the fourth range zero pulse in the range notch.					
	b. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to AUTO. Note and record the indication on the RSPU COORD DISPLAY Designate this indication as D ₁					
		O1 from D2. Record the range differen				
1		D ₁ equals the range difference	t.			
			Adjust R2 on the preknock generator located in the pulse generator-indicator. If R2 adjustment range is insufficient, perform the procedures in table 5-7, steps 2 through 6.			
ı	Check the r	ange zero in the MP long pulse n	node.			
	a. On the tar	get track control-power supply, set th	e TTR PULSE WIDTH switch to LONG.			
		At least 15 stable range zero pulses are present on the range indicator.				
			Perform the procedures in table 2-6.			
		The TTR is still locked on the	fourth range zero pulse.			
			Reacquire the fourth range zero pulse.			
I		The RSPU COORD DISPLATING Step 6s above.	Y indicates the range difference recorded			

in step 6t above.

Adjust R6 on the preknock generator located in the pulse generator-indicator If the R5 adjustment range is insufficient,

(U) Table 2-9. Daily Range System Checks: TTK: Continued CONFIDENTIAL

tep	Hyerasico ostica indication	(re the pr cedure		
7.	Continued			
"	Офиниси	perform the procedures in table 5-7, steps 2 through 6		
	 On the target antenna control group, de 	epress the MP switch		
	The MP-OFF indicator	on the pulse generator indicator illuminates.		
- 1		Refer to figure 65		
	Acre Proceed to supplied genow in he TTR range	zero was esta - shed using a KDP		
8	Check the TIR range zero in the short pulse	mode using the range zero pulses		
	a On the target ancenna control group, se			
	At least 15 stable range	zero pulses are present on the range indicator.		
		Perform the procedures in table 2-6		
- 1	b Sot the TTR range to center the eighth			
	Set the range MAN ACQUIRE AID TRACK MD AUTO switch to AUTO Note and record the indication on the RSPU COORD DISPLAY. Designate this range indication as D ₂ .			
	d Set the range MAN ACQUIRE AID 1	TRACK AID AUTO switch to MAN		
	e Set the TTR range to center the fourth	**		
		TRACK AID: AUTO switch to AUTO. Note SPL COORD DISPLAY. Designate this range		
	g Subtract D from D Record the range	ge difference.		
	D, equals the range differ	ence.		
		On the TTR RSPU, adjust the SHORT PULSE DELAY thumbwheel switches and momentarily depress the ENTER switch until the value indicated on the COORD DISPLAY equals the range difference Record the SHORT PULSE DELAY thumbwheel switch settings.		
9	Check the TTR range zero in the long pulse	mode using the range zero pulses.		
	On the target track control-power supply,	set the TTR PULSE WIDTH switch to LONG		
	The MAGNETRON meter	er indicates in the center of the white block. Adjust the HV SUPPLY knob on the control-power supply		

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The TTR is still locked on the fourth range zero pulse.

At least 15 stable range zero pulses are present on the range indicator.

Perform the procedures in table 2-6

Reacquire the fourth range zero pulse

(U) Table 2-8. Daily Range System Chechs—TTR—Continued CONFIDENTIAL

	CONFIDENTIAL				
Blep	Operation	Normal Indication		Corrective procedure	
9,	Continued				
		The TTR RSPU corded in step 8g	COORD DIS above.	sPLAY indicates the range difference re-	
				On the TTR RSPU, adjust the LONG PULSE DELAY thumbwheel switches and momentarily depress the ENTER switch until the range difference recorded in step &g above is indicated Record the LONG PULSE DELAY thumbwheel switch settings.	
10.	Check the rar	ge zero in the MP lone	pulse mode.	0	
		ulse generator-indicati		tches as indicated.	
		viteh	Setting		
		UN-STOP	RUN		
	PRE-KN JETTER-		NORMAL		
			JITTER		
	b On the target antenna control group, depress the MP switch.				
		The MAGNETRO	N meter indic	ates in the center of the white block.	
				Adjust the HV SUPPLY knob on the target track control-power supply.	
		The MP—ON indic	ator on the p	ulse generator-indicator illuminates,	
				Refer to figure 65	
		The TTR is still to	cked on the f	ourth range zero pulse.	
				Reacquire the fourth range zero pulse.	
		The TTR RSPU corded in step 8g :	COORD DIS	PLAY indicates the range difference re-	
				Adjust R6 on the preknock generator	
				located in the pulse generator-indica- tor. If the R5 adjustment range is in-	
				sufficient, perform the procedures in	
- 1				table 5-7, steps 2 through 6.	
1.	Check the rang	ge zero in the MP shor	t pulse mode.		
	a. On the s SHORT	target track control-p	ower supply,	set the TTR PULSE WIDTH switch to	
		The MAGNETRO!	N meter indic	ates in the center of the white block.	
				Adjust the HV SUPPLY knob on the target track control-power supply.	
		The TTR is still los	ked on the fo	ourth range zero pulse.	

Reacquire the fourth range zero pulse

(U) Table 2-8. Duily Range System Checks-TTR-Continued CONFIDENTIAL

Step	Openition	Normal Indication	Cuerculare procedure
11.	Continued		
		The TTR RSPU COC recorded in step 8g above	ORD DISPLAY inducates the range difference re.
			Adjust R2 on the preknock generator located in the pulse generator indicator If the R2 adjustment range is insufficient, perform the procedures in table 5-7, steps 2 through 6
	b On the t	arget antenna contros group.	depress the MP switch
	0 011 011 - 1		or on the pulse generator-indicator illuminates. Refer to figure 65.
12	Check the rai	ige shift due to switching the	pulse modes.
	note the	exact range on the RSPU C	AID-TRACK AID AUTO switch to MAN and OORD DISPLAY
	b. On the LONG	target track control power	supply, set the TTR PULSE WIDTH switch to
		The range indication of noted indication in a sh	n the RSPU changes less than 15 yards from the ove
			Set the TTR PULSE WIDTH switch to SHORT and perform the procedures in table 5-7, steps 5 and 6.
18.	Reestablish t	he switch positions.	
	On the target	antenna control group, set t	the MULTI BIN switch to OFF
14.		e TTR transmitter. V SUPPLY knob to START	and depress the HV SUPPLY -OFF switch

(U) Table 2-9. Daily Manapules Receiver Checks—TTR
UNCLASSIFIED

Corrective procedure Operation Normal radication 8tep Note. To m names RF interference insure that the MTR and TFR antennas are not simultaneously aimed at the radar test set must or other common object. 1. Prepare for the monopulse receiver checks. Perform the procedures in table 2-1.1 On the target antenna control group, set the switches as indicated Switch Setting TEST TEST MULTI BIN OFF RANGE TRACK TTR AGC-LIN-LOG AGC

 $^{\mathrm{t}}$ Om II this step J the checks in the precedura tables have been performed by properties.



(U) Table 2-9. Daily Monopulse Receiver Checks-TTR-Continued

Step	Operation Normal radication	Corrective procedure				
1.	Continued					
	c On the target test control,	c. On the target test control, set the switches as indicated:				
	Switch	Setting				
	SIGNAL LEVEL	00				
	FREQ SELECT MODE	REMOTE				
	PULSES	PULSE SINGLE				
	d. On the target track control	-power supply, set the switches as indicated.				
	Switch	Setting				
	AGC-MANUAL	AGC				
	TTR PULSE WIDTH	LONG				
		R				
	Switch	monitor, set the switches as indicated Setting				
	(IF TEST)—ADJ	ADJ				
	RCVR TEST	BIAS				
	BEACON—TARGET	BEACON				
	PRESET VID MON	1 SUM				
	f. Momentarily operate the S					
		P CENTER indicator is illuminated.				
- 1		Refer to figure 50.				
	g On the missile control andicus set to STANDBY	eator group, verify that the TARGET—STANDBY—MISSILE switch				
	h. On the IF test generator, ver	rify that the OSC switch is set to OFF.				
2.	Check the performance of	the monopulae receiver on receiver noise signals.				
	Note All switches and meters are	ocated on the target error voltage monitor unless otherwise indicated.				
	a. Observe the RCVR TEST m	neter.				
	The averag	e indication is between 0 and 10.				
		(1) Verify that the radar test set				
- 1		is not selected.				
		(2) Perform the procedures in table 4-6.				
		ritch to (IF TEST) and the RCVR TEST switch to (SUM).				
	The averag	e indication on the RCVR TEST meter is between 40 and 60.				
		Perform the procedures in table 4-6.				
	c. Set the RCVR TEST switch					
	The average	e indication on the RCVR TEST meter is between 25 and 100.				
		Perform the procedures in table 4-6				

(U) Table 2-9. Daily Monopulse Receiver Checks-TTR-Continued

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Siep	Operation	Normal Industion	Corrective procedure			
2.	Continued	The state of the s				
	d. Set the S	RCVR TEST switch to (EL). The average indication on	the RCVR TEST meter is between 25 and 100 Perform the procedures in table 4-6			
3.	a. On the t	equire the radar test set. larget track control-power supp target error voltage monitor TEST switch to BIAS.	nly, set the TTR PLLSE WIDTH switch to SHORT set the (IF TEST)-ADJ switch to ADJ and the			
4	A course and	lock on the radar test set sign:	al in the long pulse mode.			
*	a Perform	the procedures in table 2-7, su that if an anna control group, se arget antenna control group, se witch to AUTO	eps 2 and 3 SET TAK MULT THA SULEN DO OFT the range MAN ACQUIRE AID—TRACK AID—			
	c. On the	s to AUTO	set the elevation and azimuth MAN AlD AUTO			
		The radar test signal is sta	ble and centered in the range notch.			
			(1) Repeat step 4 (2) Perform the procedures in table 2-10			
	d. Note a	nd record the range, elevation imuth, and range switches to M	and azimuth LED position data. Set the eleva-			
	,		nd range displays are stationary			
		<u> </u>	Perform the MAN servo balance procedures in table 4-8, step 2, 5, or 6 as required.			
	Note Care	should be taken to keep the elev- noted for the lock-on position.	ration, azimuth, and range LED position data at the same			
5.	Prepare the	target test adapter for the mo-	nopulse receiver sensitivity check.			
	a. Connective sign	+				
	b. On the	target test adapter, set the ME to ON	AS-CAL switch to MEAS and the AMP ON-OFF			
	c. Set the	TEST IND switch (\$23) to Of	į.			
		A radar test set signal wi present on the range indi	th an amplitude of approximately 3/4 of an inch is cator			
			On the test adapter, adjust the GAIN control and the setting of the ATTENUATOR VOLT AGE switch Refer to figure 51			

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7.

(U) Table 2.9 Daily Monopulse Receiver Checks-TTR-Continued

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_	UNCLASSIFIED				
Scep	Operation	Surmal inducation	Correcto e procedure		
5	Continued				
	Sete 16 sho monition at 33	test signal indicates enging it may leave the target lest adupter	he necessary to add a ten connector and a 50 of major		
	Some Allse	witches in steps 6. hmogh 9. lelow a	re an the targe, test control spless otherwar, in licates,		
6	Check the si	am channel receiver sensitivity			
	a Set the l	Pt LSES switch to DOUBLE and	the SIGNAL LEVEL switch to 10		
			appear on the range indicator. The signal am-		
			Perform the procedures in tuble 5-6		
	b Increase barely d	the SIGNAL LEVEL switch in scenable	edication until the first radar test set signal is		
		The second pulse remains vis	sible and does not disappear at any time		
			Perform the procedures in table		

c. Record the SIGNAL LEVEL switch indication

The switch indication plus 2 db is equal to or greater than the computed receiver sensitivity figure.

5.6

- (1) Perform the procedures in table 4-2. Repeat the procedures in table 2-9
- (2) Perform the procedures in table 5-3. Repeat the procedures in table 2.9

Note. The init alcomputed receiver sensitivity figure is obtained by performing the procedures in table 5.4. Check the azimuth channel receiver sensitivity.

- 4. Set the SIGNAL LEVEL switch to 00.
 - b. On the target error voltage monitor, set the VID MON switch to AZ
 - c Rotate the az muth handwheel to not too the antenna 10 m.ls greater than the radar test set coordinates noted in step 4d above.
 - d Increase the SIGNAL LEVEL switch indication until the first radar test signal is barely discernible
 - e Record the SIGNAL LEVEL switch indication

The switch indication plus 8 db is equal to or greater than the SIGNAL LEVEL switch indication recorded in step 6c above.

- Perform the procedures in table 4-2. Repeat the procedures in table 2-9
- (2) Perform the procedures in table 5-3. Repeat the procedures in table 2-9
- f Rotate the azimuth handwheel to position the antenna to the radar test set coordinates noted in step 4d above

it , Table 2-9. Daily Manopulse Receiver Checks-TTR-Cont. much

UNCLASSIFIED

Step	эрелацоп	Normal producation	Corrective procedure
ß.		evation channel receiver sensitivi 7 augve, substituting EL for AZ	
9	Reestabaish	the switch positions and remove	the coaxial cable
	g. Remove	the coaxial cable added in step 5	g above
	nected a	t J1 on the test adapter	added in step 5c above, they should be discon
	c On the I		L LEVEL switch to 70 and the PULSES switch
	d, On the l	est adapter, set the AMP ON-OI	FF switch to OFF.
		TEST IND (\$23) switch to OFF	
	f On the	missile control-indicator group, (DBY)	set the TARGET STANDBY-MISSILE sw to

² Omit this step if the checks in the succeeding tables are to be performed in sequence

(U) Table 2-10 Daily Tracking Serve Checks TTR

leb.	Operation	Normal indication	Correctlys procedure
1	Acquire the	radar test set in the short pulse n	tode:
	a. Perform	the procedures in table 2-7, steps	1 and 2
	b. Observe	the range indicator	
		A stable short pulse radar tes	it set signal is centered in the range notch.
			Perform the procedures in table 4.4.
		target antenna contro group, set to AUTO	the elevation and azimuth MAN-AID-AUTO
		The signal is still present in t	he range notch.
			Perform the procedures in table 5-11

(U) Table 2-10. Daily Tracking Serva Checks-TTR: Continued

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		OHOLAGON IE	<u> </u>
Suep	Operation	Normal indication	Corrective procedure
2.	Check the e	levation and azimuth auto lock-on	error.
	a. On the HI pos	target error voltage monitor, holo	the EL SENS and AZ SENS switches in the
		Both meters indicate within	one small division of zero.
			Perform the procedures in table 5-11.
		e the switches,	
	azunut	h MAN-AID-AUTO switches to M	
	should be at th	he LED indications noted above	steps, the elevation and azimuth antenna positions
3.		levation servo sensitivity in the sho	
	a. Increas step 2c	e the antenna elevation position 5 above	mils from the lock-on position recorded in
i		The EL ANGLE ERROR 1 indicates between +4 and +6	meter on the target error voltage monitor mils.
			 On the target error voltage monitor, adjust the EL GAIN control to obtain an indication of +5 mils on the EL ANGLE ERROR meter.
			(2) Perform the procedures in table 5-11.
	b Decreas step 2c	se the antenna elevation position 5 above.	5 mils from the lock-on position recorded in
		The EL ANGLE ERROR me	ter indicates between 4 and 6 mils.
			Repeat o above, including the corrective procedure in (1). Repeat b above,
4.	Check the ele	evation servo sensitivity in the long	pulse mode.
	a. On the	target track control-power supply, s	et the TTR PULSE WIDTH switch to LONG
	b Increase corded	ın step 2c above.	5 mils greater than the lock-on position re-
	·	The EL ANGLE ERROR n indicates between +4 and +6 i	neter on the target error voltage monitor mils.
			(1) On the elevation servo error converter, adjust the LP TRIM control to obtain an indication of +5 mils on the EL ANGLE ERROR meter
			(2) Perform the procedures in table 5-11
	C Decreas	e the antenna elevation position 5 2c above.	5 mils from the lock-on position recorded
- 1		The EL ANGLE ERROR met	er indicates between -4 and -6 mils.
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(I) Table 2 10 Duly Tracking Serva Checks—TTH Continued UNCLASSIFIED

	O TOCHOGNIED
Step	tye dami Sarria nasal 6 ans profession
4.	Continued
	Repeat 6 above, including the corrective procedure in (1) Repeat e above
5.	Check the maximum elevation servo sensing error.
	Decrease the antenna elevation position to obtain maximum error on the target error vortage monitor EL ANGLE ERROR meter
	The indication on the EL ANGLE ERROR meter is -15 mils or greater.
	Perform the procedures in table 5-11
	A negative error pip is present on the lower sweep of the elevation indicator
	Refer to figure 48
6.	Check the antenna auto lock-on from maximum error
	a While observing the elevation error signal on the lower sweep display, on the target antenna control group set the clevation MAN AID: AUTO switch to AUTO.
	The elevation LED indication changes to the elevation coordinate of the radar test set. The error signal decreases to zero with no more than one overshoot.
	Perform the procedures in table 5-11
	b. On the target track control-power supply, set the TTR PULSE WIDTH switch to SHORT
	c. Set the elevation MAN—AID—AUTO switch to MAN
7.	Check the azimuth tracking servo.
	Repent steps 3 through 6 above, substituting AZ for EL and azimuth for elevation
8.	Reestablish the switch positions.
	 o On the missile control-indicator group, set the TARGET—STANDBY MISSILE switch to STANDBY
	b. On the target test control set the SIGNAL LEVEL switch to 70
	c On the target antenna control group, set the MULTI BIN switch to OFF and the range MAN ACQUIRE AID—TRACK AID—AUTO switch to MAN
	d On the error voltage monitor, set the BEACON -TARGET switch to TARGET

(U) Table 2-11 Daily Lin Log Receiver Checks-TTR

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Blep	«Jpëration	Norma indication	Correntino procedure
L	_	the lin-log receiver che procedures in table 2-1.1	cks.

Omat this step if the checks in the precising tables have been performed in sequence

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(U) Table 2-11 Daily Lin Log Receiver Checks-TTR Cont need

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			OTTOCKOOTI IED
Step	Operation	Normal industrial	etra e grandpare
1.	Continued		
	6 On the tar	get antenna control	group, set the switches as indicated
	Swu	ich	Setting
	TEST		TEST
	MULTI B	7 -	OFF
	AGC—LI		LIN LOG
	c On the tar	get track control-pov	ver supply, set the TTR PULSE WIDTH switch to SHORT
		The amplitude and 1/2 inch.	of the receiver noise on the range indicator is between 1/4
			Perform the procedures in table 4-10
	d Set the TT	R PULSE WIDTH s	writch to LONG
		There is a cha	nge in the appearance of the receiver noise
			Perform the procedures in table 4 10
		The amplitude	of the receiver noise is between 1/4 and 1/2 inch
			Perform the procedures in table 4-10.
2.	Reestablish	the switch position	ns.
- 1	On the toward	antenna control con	up. set the AGC LIN LOG switch to AGC

Surp	Operation	Normal indication	Characture procedure		
1.	Prepare fo	r the MTR presentation chec	ks.		
	a Perform t	the procedures in table 2-1.1			
	b On the m	issile track contro-power supply,	set the AGC-MANUAL switch to AGC		
ĺ		c On the missile track control drawer set the TEST switch to TEST and the DISABLE switch to the down position			
	d. Verify that the MTR range is greater than 1,000 yards.				
		ITR range indicator verify that LENGTH control is fully countered	the IMAGE SPACING switch is set to OFF and the clockwise.		
2.	Check the	range indicator			
	Observe the	Observe the range indicator			
		The presentation is focu	sed and well defined.		
ĺ			(1) Adjust the INTENSITY and FOCUS controls.		

*Omit this step of the checks in the preceding tables have been performed in sequence

(U) Table 2-13 Daily Presentation Checks -MTR -Continued

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Чер	hjarratidei	by a million and a single	n e přívěstař
2.	Continued		
-			(2) On the missile sweep genera for, adjust the ASTIGMA- TISM control Readjust FOCUS control if necessary.
			Refer to figure 21
		Receiver noise is present.	
			Perform the procedures in table 2-17, steps 1 and 2
		The sweep is positioned appro- indicator	oximately 1/2 meh below the center of the
			Perform the procedures in table 5 18
		The expanded area of the sweet	is approximately 1/2 inch long.
		tile expanded area or our annual	Perform the procedures in table 5-18.
		The sweep length is approxim	ately 4 inches long
		,	Perform the procedures in table 5-18.

(1) Table 2 13 Duily Transmitter Checks MTR

Step	Operation	Normal understant	Derective proteduty
1.	Prepare fo	or the MTR transmitter che	ecka.
	a. Perform	the procedures in table 2-1	
			set the TEST switch to TEST '
			t the BEACON—TARGET switch to BEACON
		ontrois and indicators in steps 2 thr	rough 5 below are located on the missile track control power supply
2.	Check the	operation of the magnetro	n in the beacon mode.
	a Rotate th	ne HV SUPPLY knob to STAR	T and depress the HV SUPPLY ON switch
		The HV SUPPLY—I SUPPLY—ON indica	READY indicator light extinguishes, and the HV
			Refer to figure 32
		On the radar power PREHEAT, HOT, an lights extinguish.	control-indicator, the MISSILE—HIGH VOLTS— id READY and the MISSILE -INTLK indicator
			Refer to figure 32

⁽Omit this step if the checks in the preceding tables have been performed in sequence

(U) Table 2-13. Daily Transmitter Checks-MTR - Continued

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Step	Operation	Norther intraces	Currective procedure
3.	Continued		1 werective procedure
	Conunued	The MISSILE HIGH VO control-indicator illumina	LTS -ON indicator light on the radar power
			Refer to figure 32.
	 b. Adjust the 	HV SUPPLY knob to obtain an in	dication of 10 ma on the MAGNETRON meter
1		The MAGNETRON meter	indicates a value of 10 ma.
			Perform the procedures in table 5-21
		e MAGNETRON switch to KV FS	=20.
	Note: The met	ar indication may oscillate slightly.	
		The MAGNETRON meter	indicates a value between 10 and 14 kv.
			Perform the procedures in table 5-14
			Refer to figure 16.
1	d. Operate the	MAGNETRON switch to MA FS	
		The MAGNETRON meter i	indicates a value between 35 and 50 ma.
			 Perform the procedures in table 2-20, steps 1 through 3.
			(2) Perform the procedures in table 5-14.
			Refer to figure 16.
		peration of the magnetron in t	he target mode.
1	a. Rotate the	HV SUPPLY knob to START	
	b On the miss	ale error voltage monitor set the I	BEACON TARGET switch to TARGET
	 c. Adjust the l d. Operate the 	HV SUPPLY knob to obtain an inc MAGNETRON switch to KV FS	heat.on of 3 ma on the MAGNETRON meter
		The MAGNETRON meter i	ndicates a value between 10 and 15 kv.
			Perform the procedures in table 5-14.
			Refer to figure 16.
	e Operate the	MAGNETRON switch to MA FS	
		The MAGNETRON meter i	ndicates a value between 10 and 15 ma.
			Perform the procedures in table

4. Establish the operating frequency of the transmitter.

a. On the missale error voltage monitor, set the BEACON—TARGET switch to BEACON

Refer to figure 16

(U) Table 2-13. Daily Transmitter Checks-MTR-Continued

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Step	Operation	Normal indication.	Cornerant proordule
4.	Continued	 I	
-	b Adjust th	e HV SUPPLY knob to obtain a	in indication of 10 ma on the MAGNETRON meter
		c below if the OFF FREQ indicator is	
	c Set the	TIME S. FW south to SLE	W, and operate the FREQUENCY switch to set the ed cavity in use as indicated on the SLEW scale of the
	d Set the 7	TUNE—SLEW switch to TUNI	j.
	e Operate	the FREQUENCY switch antil he white segment of the TUNE	the pointer on the FREQUENCY meter indicates a nul scale
- 1			ator light extinguishes.
		•	Perform the procedures in tabl
			5-15
5.	Deenergi	e the MTR transmitter.	
	Rotate the	HV SUPPLY knob to START as	nd depress the HV SUPPLY OFF switch.

(U) Table 2-14. Daily Target AFC Checks. MTR

			UNGLASSIFIED
Step	Dyeration	Mormal malicatoris	Convectave protestave
1.	a. Perform th	the target AFC clue procedures in tables sale error voltage messile track control dr	
	DISABLE RANGE		down ZERO
2.	On the mice	Y ON switch. Adju	er: ver supply, rotate the HV SUPPLY knob to START and depress the list the HV SUPPLY knob to obtain an indication of 3 ma on the
3.	Note: Ai) cor	F TEST)—ADJ swit	tion. coated on the missile error voltage monitor unless otherwise indicated. ch to ADJ and the RCVR TEST switch to XTAL. EST meter indicates between 15 and 75. Perform the procedures in table 4-14.

^{*}Omes that step if the checks in the preceding tables have been performed in enquence

(t., Table 2-14. Daily Target AFC Checks-MTR—Continued
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up _	Operation	Norma indication	Corrective procedure
a .	Continued		
	b. Operate th	e BEACON TARGET sw	tch to BEACON and then back to TARGET
			on, the TARGET AFC LOCK indicator is not ET AFC LOCK indicator illuminates within one set to TARGET
			Perform the procedures in table 5-1
		Stable range zero pulses a	are present on the range indicator.
			Perform the procedures in table 5-1 steps 15 and 16
		On the range indicator, between 1 and 1-1/4 inch	the magnetron transmitter pulse amplitude is uses.
			 On the range indicator missue video amplifier, adjust the VIDEO GAIN contro.
			(2) On the MTR RSPU, adjust R2 or A23
			(3) Refer to figure 21

Deenergize the MTR transmitter.

On the missile track control power supply, rotate the HV SUPPLY knob to START and depress the HV SUPPLY OFF switch

5 Reestablish the switch positions.

- a On the missile track control drawer, set the RANGE switch to NORMAL.
- b. Set the BEACON-TARGET switch to BEACON

(U, Table 2-15: Daily Beacon AFC Checks-MTR UNCLASSIFIED

+p	000	iston Normat Inda	PSIOS Corrective procedure				
.	Prepare for the beacon AFC checks.						
	a. Perform the procedures in table 2-1.						
	b. On the missile track control drawer set the switches as indicated						
		Switch	Setting				
		TEST	TEST				
		DISABLE	down				
		RANGE	NORMAL				

¹ Omit this step if the checks in the preceding tables have been performed in sequence

(L) Table 2-15 Daily Reacan AFC Checks MTR Continued UNCLASSIFIED

cape	ration	Sorma- indication	Corrective Storedum
Co	ntmaed		
¢	On the	miss le control indicato	or group, set the switches as indicated
	S	witch	Setting

TARGET-STANDBY— MISSILE

MISSILE

SIGNAL LEVEL, 00

FREQ SELECT REMOTE

MODE PULSE

PULSES SINGLE

- d. On the missile track control power supply, set the AGC-MANIAL switch to AGC
- e On the missile error voitage monitor, set the switches as indicated

Switch	Setting
(IF TEST)-ADJ	ADJ
RCVR TEST	BIAS
BEACON TARGET	BEACON
PRESET	1

On the IF test generator, verify that the OSC switch is set to OFF.

Acquire the radar test set.

a. Momentarily operate the SWEEP PRESET switch

The SWP CENTER indicator is illuminated

Refer to figure 23

b Position the missian antenna to the azimuth and elevation coordinates of the radar test set.

. Note: All switches, controls, and meters are longed on the missile error voltage monitor unless η her wise indicated.

Note. The procedures in a through f below can be disregarded of the signal from the radar less set is visible on the range indicator.

- On the missue control indicator group, set the MODE switch to CW and verify that the TARGET STANDBY MISSILE switch is set to MISSILE.
- d Position the PRESET I COARSE control fully clockwise. Position the FINE control to approximately the middle of the adjustment range.
- Slowly adjust the PRESET I COARSE control counter lockwise while observing the HCVR TEST meter for a max voltage increase. Adjust the control for near maximum bias voltage.
- On the missue control indicator group, set the MODE switch to PULSE

The pulse from the radar test set is visible on the range indicator.

Refer to figure 93.

2.

(U) Table 2-15. Daily Beacon APC Checks-MTR: Continued

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_			
Step	Operation	Normal indication	Contentia blocogate
-			

2. Continued

- g. Set the MTR range to within 8,000 yards of the range of the radar test set.
- a On the missile track control drawer, set the DISABLE switch to DISABLE

The pulse from the radar test set is centered in the range notch

Perform the procedures in table 5.3, and repeat the procedures in steps 1 and 2a through a above.

Refer to figure 21

- Set the RCVR TEST switch to AFC
- Adjust the PRESET 1 COARSE control to obtain an indication between 45 and 55 on the RCVR TEST meter
- 4 Hold the AFC SENS switch in the lil position and slowly adjust the FINE control for an indication of 50 on the RCVR TEST meter. Release the switch

Note If the adjustment range of the FINE control is insufficient it will be necessary to position the account to midrange and readjust the PRESET 1 COARSE control

(L) Table 2-16. Daily Beacon AFC Checks-MTR-Continued

		UNCLA	SSIFIED
Siep	Operal	tion Normal andication	Corrective procedure
3.	Perfe	orm the beacon AFC operation che	cks.
	а	Observe the range indicator	
		A stable radar test sei	signal is centered in the range notch.
			Perform the procedures in table 4-15
	b	Observe the AFC LOCK indicator	9.
		The BEACON indicat	or is illuminated
			Refer to figure 23.
			ST meter vary the PRESET 1 COARSE contro- popular meter indications from 40 to 60
-		The RCVR TEST me	ter indications are obtained
			Perform the procedures in table 4:15
			set signal remains present on the range indicator or indications from 40 to 60.
			Perform the procedures in table 4-15.
	đ	Readjust the PRESET 1 COAF step 2j and k above.	tSE and FINE controls using the procedures in
	e	On the miss le track control draw	er, set the DISABLE switch to the down position
	f	On the missile controvindicator gr	oup, set the SIGNAL LEVEL switch to 70
	И	Momentarily operate the BO SWE	EP contra
		The SWP CENTER in	dicator is extinguished.
			Perform the procedures in table 4-15
	h	Set the SIGNAL LEVEL switch to	00
		The BEACON indicat	or is illuminated

Refer to figure 23.

The RCVR TEST meter indicates between 45 and 55 with the AFC SENS switch in the HI position.

Perform the procedures in table 4-15

The radar test set signal on the range indicator is stable.

Perform the procedures in table 4-15

Reestablish the switch positions.

4

On the missic control indicator group, set the TARGET-STANDBY MISSILE switch to STANDBY and the SIGNAL LEVEL switch to 70

fl') Table 2-16 Daily Range System Chacks-MTR

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			COMPIDE	NIIAL	
itep	Сары	Se and	indication	Co.	rrective pracedure
1.	Pre	pare for the MTR ran	ge system checks,		
	a	Perform the proced			
	b	On the miss le track	control drawer s	et the swite	l'es as mucated
		Switch	Setting		
		TEST	TEST		
		DISABLE	down		
		RANGE	NORMA	L	
	c	On the mission trace	k control power s	upp y, set t	the AGC-MANUAL switch to AGC
-1	d	On the miss le error	t voltage mon tor,	set the BEA	CON-TARGET switch to TARGET
	e	On the MTR RSPU,			
	ſ	On the range indicat SWEEP LENGTH of	for verify that the entrol is fully cour	MAGE SE	ACING switch is set to OFF and the
	g.	On the rear c entries	a pagel of the cod	er, set the a	witches as indicated
		Switch	Settin	ng.	
		MISSILE RESPONS TIME ADJUST	SE NORM	AL	
		PRF	NORM.	AL	
	h	On the coder contro	I paner, see the PR	EKNOCK	switch to NORMAL.
	Che	ck the range gate oper			TO THE TOTAL PROPERTY OF THE P
	On			te the SLE	W switch to slew the range from 0 to
1			numetud iran of th	0 4-41	* Ab
1		cator m	ove smoothly from	n 0 to 2002	d the range notch on the range indi
			-		Refer to figure 21.4
П		The edg	e of the sweep exi	tends 1/4 in	sch beyond the expanded area
					On the track sweep generator in
					the range indicator, adjust the MAX RANGE SWEEP control
				(2)	Refer to figure 21.4.
	Ene	gize the MTR transm			
	(I	wird relations (46 MAS	OLLTI-ON SMIP	ch;	the HV SUPPLY knob to START
	b.	Adjust the HV SUP MAGNETRON meter	FLY knoh to obt	tain an ind	ication of 3.0 milliamperes on the
	No	te. The same me od of	perform og the range	e zero proces	lures (known dutum point (KDP) or range
	2010	pulse trethod must be a	and for he TTR M	TR and TRE	The methods must an be presented

Omit this step if the cheeks in the preceding tables have been performed in sequence

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zero pulse method must be used for he TTR MTR and TRR. The methods must not be intermixed

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(U, Table 2-16 Daily Range System Checks—MTR: Con need CONFIDENTIAL

Step	Ops	reasion	Nasum tudication	Corrective procedure	_
4.	Ch	eck the M	TR range zero using a KDP		
	N	fore. If a si	irveyed KDP is not available, proci	ed to step 6 helpw	
	a.	Rotate nates o	the elevation and azimuth h	andwhee's to position the antenna to the coord	i.
	b	By vary	ng the MTR range, center th	e KDP signa in the range notes	
	e	On the		set the elevation, azumuth, and range MAN-AID	j.

Step

Operation

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Corrective procedure

(U) Table 2.16. Daily Range System Checks—MTR: Continued CONFIDENTIAL

No mat indication

4	Continued					
	The elevation and azimul	h coordinates and range indication are stable.				
		Select a different KDP				
	The MTR RSPU COORI	DISPLAY indicates the surveyed range to the				
		On the MTR RSPU, adjust the BEACON DELAY thumbwheel switches and momentarily depress the LNTFR switch until the KDP range is indicated. Record the BEACON DELAY thumbwheel switch settings.				
	II. Set the elevation, azimut i, and range	MAN_AID_AUTO switches to MAN				
5	Check the missile response time correction	to MTR range zero.				
	a On the coder rear electrical panel, switch to TEST	set the MISSILE RESPONSE TIME ADJUST				
	 Subtract the assigned missile response range difference as D₄ 	time in yards from the KDP range. Record this				
	c Center the KDP signal in the range no	tch				
	d On the miss le track contro, drawer AID-AUTO switches to AUTO	set the elevation, azimuth, and range MAN				
	The MTR RSPU COORD DISPLAY indicates the computed D_{ij} range difference					
		On the coder rear electrical panel, re lease the MISSILE RESPONSE TIME ADJUST control lock. Adjust the con- trol to obtain the required range dif- ference. Lock the control				
	e Set the elevation, azimuth and range i	MAN -ALD-AUTO switches to MAN				
	f Set the MISSILE RESPONSE TIME A	DJUST switch to NORMAL				
	Note Proceed o step 8 below if the MTR range	zero was established using a KDP				
6	Check the MTR range zero using the range	zero pulses.				
	a Rotate the SWEEP LENGTH control	fully clockwise				
	a.1 On the missile track control drawer, se	t the RANGE switch to ZERO				
	At least 15 stable range z	ero pulses are present on the range indicator				
		Perform the procedures in table 2-14				

Set the MTR range to center the range notch on the eighth range zero pulse.

Set the range MAN-AID-AI TO switch to AUTO. Note and record the indication

(b), Table 2-16 Daily Hange System Checks-MTR-Continued
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itep	Ciperania	is Normal and assum	Corrective procedure					
6.	Contin	Continued						
	d. Set the range MAN: AID- AUTO switch to MAN							
			range note i on the fourth range zero pulse					
	7 8	et the MAN AID AUTO swite	h to AUTO. Note and record the indication on the Designate this range indication as D.					
	g. 8	abtract \mathbf{D}_1 from \mathbf{D}_2 . Record th	e range difference.					
		D_ equals the range	difference.					
			On the MTR RSPU, adjust the BEACON DELAY thumbwheel switches and momentarily depress the ENTER switch will the value on the COORD DISPLAY equals the range difference, Record the BEACON DELAY thumbwheel switch settings					
	h. So	of the range MAN-AID-AUTO	switch to MAN					
7	Check	Check the missile response time correction to MTR range zero using the range zero pulses						
	a 0		nct set the M.SSILE RESPONSE TIME ADJUST					
	b St	b. Subtract the assigned missile resumme in yards from the range difference recorded in step by above , theorem it is range difference as $D_{\rm q}$						
	c St	t the MTR range to center the r	ange totch on the fourth range zero pulse					
		t the range MAN - AID-AUTO						
			DISPLAY indicates the computed D range cuf-					
		ference	Things the					
			On the coder rear electrical panel, re- lease the MISSILE RESPONSE TIME ADJUST control lock. Adjust the con- trol to obtain the required range dif- ference. Lock the control.					
	a. Se	Set the range MAN-AID-AUTO switch to MAN						
		THE PERSON OF THE PERSON WINDS						
- 1	g O	The state of the second of the second						
- 1	h. 5e	h. Set the TARGET BEACON switch to BEACON						
		otate the SWELP LENGTH cont	rol fully counterclockwise					
В.		gize the MTR transmitter						
	On the depress	On the missile track control power supply, rotate the HV SUPPLY knob to START and depress the HV SUPPLY OFF swift h						

depress the HV SUPPLY OFF switch,

(U) Table 2-17 Daily Monopulse Receiver Checks-MTR

S tep	Operation	Nurmal indication		Corrective procedure			
		n namice RF interference radar tost set mast or othe		MTR and TTR antennas are not simultaneous,			
1	Prepare for	the monopulse receiv-	er checks.				
	a. Perform the procedures in table 2-1 *						
	b On the	e masale track control	drawer, set the	switches as indicated			
	Swite	h	Setting				
	TEST		TEST				
f	DISA		down				
	RANC		NORMAL				
	c On the	missile control-indica	ator group, set t	he switches as indicated			
		Switch	Setting				
ł		AL LEVEL	00				
	FREQ MODE	SELECT	REMOTE				
	PULS		PULSE				
	TARG	ET STAND- MISSILE	STANDBY				
	 a. On the missile track control-power supply, venfy that the AGC-MANUAI set to AGC 						
	e. On the missie error voltage monitor, set the switches as indicated						
		Switch	Setting				
	(IF TE	EST) ADJ	ADJ				
		TEST	BIAS				
		ON-TARGET	BEACON				
	PRESI VID N		I SUM				
		ntarily operate the SV		ifab			
	f Mome			r is illuminated.			
		The SWEEF CE	SN 1 E.K. HIUICHAO				
		1D 44	6 4b4 4b O.C	Refer to figure 23,			
ا ۱	_		_	C switch is set to OFF.			
2			-	er on receiver noise signals.			
	Note All :	switches and meters are	located on the mi	ssile error voltage monitor unless otherwise ind			
	a. Observ	ve the RCVR TEST m	eter				

Omit this map if the checks in the preceding tables have been performed in sequence.

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(U) Table 2.17 Daily Monopulse Receiver Checks-MTR-Continued UNCLASSIFIED

ер	Opezat	don	Normal indication	Corrective procedure		
2.	Cont	inued				
			The average indication is	s between 0 and 10.		
				 Verify that the radar test set in not selected. 		
				(2) Perform the procedures in tabl 4-16		
	b	Set the (IF TEST)-ADJ switch to (IF TEST) and the RCVR TEST switch to (SUM)		
			The average indication	on the RCVR TEST meter is between 40 and 60		
				Perform the procedures in table 4-16		
	G.	Set the R	CVR TEST switch to (AZ)			
			The average indication	on the RCVR TEST meter is between 25 and 100		
				Perform the procedures in table 4-16		
	d.	Set the R	CVR TEST switch to (EL)			
			The average indication	on the RCVE TEST meter is between 25 and 100		
				Perform the procedures in table 4-16		
3.	Prepare to acquire the radar test set.					
	On the missile error voltage monitor, set the (IF TEST)—ADJ switch to ADJ and t RCVR TEST switch to BIAS.					
4.	Acqu		ock on the radar test set sign			
	a.		missue control-indicator g MISSILE	roup, set the TARGET STANDBY MISSIL		
	ь.	Perform	the procedures in table 2-15	, step 2		
	c		missile track control draws TO switches to AUTO	r, set the range, elevation, and azimuth MAN		
			The radar test signal is a	table and centered in the range notch.		
				(1) Repeat b and c above		
				(2) Perform the procedures in tab 5-19.		
	d		range, elevation, and azum e switches to MAN	th LED position data Set the elevation, azimut		
			The elevation, azımuth,	and range displays are stationary.		
				Perform the servo balance procedur in table 4-17, steps 2, 4, and 5 required		
			ould be taken to keep the elev- k-on position	ation, azimuth and range LED position data the same		

(U) Table 2-17 Daily Monopulse Receiver Checks-MTR-Continued

Step	Opera	aron	Normal indication	Corrective procedure
5	Prep	are the	missile test adapter for the m	onopulse receiver sensitivity check.
	а.	of the		23 A-M VIDEO TEST (located on the missile side the radar set group) and the missile error voltage
	ь		missile test adapter, set the vitch to ON	MEAS—CAL switch to MEAS and the AMP ON
	c.	Set the	VIDEO switch (\$19) to TES	T
			The radar test set signa	is present on the range indicator
			The signal amplitude is	approximately 3/4 inch.
				 On the test adapter, adjust the GAIN control and the setting of the ATTENUATOR VOLTAGE switch.
				(2) Refer to figure 21

111) Table 2-17 Daily Monopulse Revewer Checks - MTR - Continued

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56en	Operation	Not have indication	Cuthy on principare		
5.	Continued d (Deleted)			_	

Note. The test signal indicates ringing of may be necessary to add a fee connector and 50-ohm derivation at J1 of the mostle test adopter.

Note: All switches in steps 6 through 9 below are ocated on the missile control indicator group unless otherwise indicated.

6. Check the sum channel receiver sensitivity.

- a. On the missile track control drawer set the DISABLE switch to the down position
- b. Set the PULSES switch to BOUBLE and the SIGNAL LEVEL switch to 40

Two radar test set signals appear on the range indicator. The signal amplitudes are approximately equal.

Perform the procedures in table 5-8.

t Increase the SIGNAL LEVEL switch indication until the first radar test set signal is burely discernible.

The second pulse remains visible and does not disappear at any time.

Perform the procedures in table 5-6.

d Record the SIGNAL LEVEL switch indication.

The switch indication plus 2 db is equal to or greater than the computed receiver sensitivity figure.

- (1) Perform the procedures in table 4-14. Repeat the procedures in table 2-17
- (2) Perform the procedures in table 5-3 Repeat the procedures in table 2-17

Note The initial computed receiver sensitivity figure is ubtoined by performing the procedures in table 5/16

7. Check the azimuth channel recoiver sensitivity.

- @ Set the SIGNAL LEVEL switch to 00.
- b. On the missile error voltage monitor, set the VID MON switch to AZ.
- c Rotate the azimuth handwheel to position the antenna 10 mils greater than the radar test set coordinates noted in step 4d above
- d Increase the SIGNAL LEVEL switch indication until the first radar test signal is barely discernible.
- e. Record the SIGNAL LEVEL switch indication.

(U) Table 2-17 Daily Monopulse Receiver Checke MTR: Continued UNCLASSIFIED

Sign	Opera ion	Stormal indication	Ędź	mective procedur		
7	Continued					
		The switch indication plus 8 db is equal to or greater than the SIGNAL LEVEL switch indication recorded in step 6d above.				
			(1	Perform the procedures in table 4-14 Repeat the procedures in table 2-17		
			(2) Perform the procedures in table 5-3. Repeat the procedures in table 2-17		
		the azimuth hands oted in step 4d abov		antenna to the radar lest set coordi		
8.		evation channel reco 7 above, substitutin	e <mark>rver sensitivity</mark> g EL for AZ and eleva	ation for azimuth		
9.	Reestablish (the switch positions	and remove the coax.	nai cable		
	a. Remove	e the coaxial cable a	dded in step 5a above			
	b. On the	test adapter, set the	AMP ON-OFF swite	th to OFF		
	c. Set the	VIDEO switch to N	IORMAL.			
	d. On the	missile control-indi	cator group, set the sv	vitches as indicated		
		Switch	Setting			
	PULSE TARGE	l Level S etstand- Missile	70 SINGLE STANDBY			
		If a ter connector an ected at J1 of the musi		ere added in step 5d above, they should be		

(U) Table 2 18 Daily ATC Cherks-- MTH

UNCLASSIFIED

			A144414A114A114A
Step	Operation	Normal indigition	Correction gracedure
		mize RF interference other common object	course that the MTR and TTR antennas are not simultuneously a med at the radi
1.	Prepare for	r the ATC check.	
	a Perform t	he procedures in ta	ible 2-1 ¹
	b On the m	ssile track control	drawer set the switches as indicated
	Switch		Setting
	TEST		TEST
	DISABLE	C .	DISABLE
	RANGE		NORMAL
		SEALE CONTROL INC. C. TANDBY	ator group, verify that the TARGET -STANDBY—MISSILE switch
	d On the m	issi e error voltage	monitor set the switches as indicated
	S	witch	Setting
	(IF TEST		(IF TEST)
	RCVRTE	ST -TARGET	(SUM) BEACON
	PRESET	-IARGEI	1
2.	Prepare th	c IF test generat	or to obtain signal-to-noise attenuator reference.
	a Set the sv	vitches as indicated	1
	Sw	itch	Setting
	OSC		ON
	MODE		CW
	PULSEV		SHORT'
			ADJUST control to 0
			ATOR switch to 90.
			ANGE PRE-SET switch
			tor, hold the REMOTE—LOCAL switch to LOCAL and adjust then an indication of 50 on the RCVR TEST meter
		e ATTENUATOR s 70 as possible.	switches until the error voltage monitor RCVR TEST meter indicate
	ø Release t	he REMOTE-LO	CALawitch

- g. Release the REMOTE-LOCAL switch.
- h. Record the settings of the ATTENUATOR switches.
- a. Set the MODE switch to PULSE
- 3. Check the ATC circuit.
 - a Decrease the setting of the 0—90 dB ATTENUATOR switch relative to the reference attenuation recorded in step 2h above by 10 db
 - b Set the MTR range to center the range notch on the test pulse.
 - c. On the missile track control drawer set the range MAN-AID-AUTO switch to AUTO.

Onell this step of the checks in the preceding tables have been performed in requence.

(U) Table 2-18 Daily ATC Checks -MTR -Consinued UNCLASSIFIED

Scop	Operation	Storma indication	Correct to procedure			
9.	Continued					
		The COAST indicate extinguished.	r light on the missile track control drawer is			
			On the AGC monitor amplifier, adjust R18 until the COAST indi- cator is extinguished			
			Refer to figure 34			
		d Increase the setting of the ATTENL ATOR switches in 1 db steps until the COAST indicator light nust illuminates				
			ATTENUATOR switches is 4 to 8 db less than the orded in step 2h above.			
			(1) Set the ATTENUATOR			
			switch to 6 db less than the			
			value recorded in step 2h abovo			
			.2) On the AGC monitor amplifier, adjust R18 until the COAST indicator light just illuminates			
			(3) Repeat step 3.			
			Refer to figure 34			
4.	Reestablish	the switch positions.				
	a. On the miss the DISABI	sile track control drawer set LE switch to the down position	the range MAN AID AUTO switch to MAN and set on			
	b. On the miss	ale error voltage monitor, se	the switches as indicated:			
	Sunt	h Setting				
	(IF TEST)= RCVR TES					
	c On the IF to	est generator, set the OSC sw	ntch to OFF and the 0 -90 dB ATTENUATOR switch to			
						

(U) Table 2-19 Daily Tracking Servo Checks-MTR

		016	
Step	Operation	Normal andication	Corrective procedure
L	Acquire th	e radar test set.	
	a. Perform	the procedures in table 2-15	, steps 1 and 2.
	b. Observe	the range indicator on the σ	yasıle radar control console
		A stable radar test	set signal is centered in the range notch.
			Perform the procedures in table 4-15.

(U) Table 2-19 Daily Tracking Serus Checks-MTR-Continued

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Str	capyration Sormal indication	Corrective procedure
1.	Continued	
	On the miss le track control drawe AUTO switches to AUTO	er set the elevation and azimuth MAN AID-
	The signal is still present	in the range notch.
		Perform the procedures in table 5-19
2.	Check the elevation and azimuth auto lock	on error.
	 On the missile error voltage monito the HJ position 	r, hold the EL SENS and AZ SENS switches in
	Soth meters indicate with	hin one small division of zero
		Perform the procedures in table 5-19
	b. Release the switches	
	azimuth MAN~AID-AUTO switches	
	Note: Unless otherwise indicated in the follow- should be at the LED indications noted above	verg steps, the e-evilton and azimuth antenna positions
3.	Check the elevation servo sensitivity,	
	 Increase the antenna elevation coords step 2c above 	mate 5 m. s from the lock-on value recorded in
	The EL ANGLE ERRO	PR meter on the missile error voltage monitor 1+6 mils
		 On the missile error voltage moni- tor, adjust the EL GAIN control to obtain +5 mils on the EL ANGLE ERROR meter
		(2) Perform the procedures in table 6-19
	 b. Decrease the untenna elevation coord step 2c above 	mate 5 mils from the lock-on value recorded in
	The EL ANGLE ERROR	meter indicates between 4 and -6 mils.
		Repeat a above, including the corrective procedure in (1)
		Repeat b above
4	Check the maximum elevation servo sensing	
	Decrease the antenna elevation coordinate error voltage monitor EL ANGLE ERROR	to obtain maximum indication on the missile meter,
	The indication on the me	ter is —15 mils or greater.

Perform the procedures in table 5-19

U) Table 2 19 Daily Tracking Serva Checks MTH Continued

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	DIV	CDASSIFIED
Step	Operation South, Indexton	silvinssi ir procedum
5.	Check the antenna auto lock on fre	om maximum error
	a White observing the ELEVATION EI MAN—AID—AUTO switch to AUTO	REOR meter on the missile track indicator, set the elevation
	The meter indicated	n returns to zero with no more than one overshoot.
		Perform the procedures in table 5-19
	b Set the elevation MAN-AID-AUT	O switch to MAN
6.	Check the azimuth tracking servo.	
	Repeat steps 3 through 5 above, substitu	iting AZ for EL and azimuth for elevation
7.	Reestablish the switch positions.	
	a On the missile control-indicator gr STANDBY and the SIGNAL LEVEL	
	b. On the missile track control drawer,	et the DISABLE switch to the down position.

16 : Toble 2 20 Daily Radar Coder Checks-MTR

P	Operation	Normal indication		Corrective procedure	
	Prepare fo	r the radar coder	check.		
	a. Perform t	he procedures in tab	le 2-1. ¹		
-				the CODER +5V indicator	
	0 011 1111 00	The CODER + 5V indicator is illuminated.			
				Perform the CODER +5V mea surement in table 5-30, step 5 Refer to figure 27	
	ε On the m	ussile track control d	rawer set the switches as a	ndicated:	
	Switch		Setting		
	TEST		TEST		
	DISABLI	E	down		
	RANGE		NORMAL		
				MANUAL switch to MANUAL.	
	e On the n PRESET	nissile error voltage i switch to 3. Adjust t	monitor set the BEACON he PRESET 3 control maxi	TARGET switch to BEACON and th mum clockwise	
	f On the n	ussile error voltage i	nonitor, momentarily opera	ate the SWEEP PRESET switch.	
		The SWP CE	NTER indicator is illun	ninated.	
				Refer to figure 23.	
	g On the co	oder rear electrical o	anel, verify that the PRF st	witch is set to NORMAL.	

(U) Table 2:20 Daily Radar Coder Checks-MTR-Continued

Step	Operation	Normal and leaston	Corrective procedum		
L.	Continued				
	h. On the coder control panel, set the switches as indicated				
		Switch	Setting		
	PREKNO	OCK	TEST		
		ENABLE	NORMAL		
	BURST	ORDER ND ORIGIN	TEST SIMULATED		
	BATTER		Greater than 2		
2.		timing indicators	•		
		the coder rear electra			
			's except PARITY ERROR are illuminated.		
		,—,—	Refer to figure 36.		
	b On the re	der control panel, se	et the BURST ORDER switch to NORMAL.		
	D. 031 4110 11	The rear elec	etrical panel BURST indicator extinguishes.		
			Refer to figure 36		
3.	Check the	status of the trans	smitter sync output pulses.		
•	Note In the remainder of this table all switches and indicators are conted on the coder control panel on less otherwise indicated.				
	a. Observe	the coder control par	nel.		
		The OUTPU	T PULSES indicator is illuminated.		
			Refer to figure 36.		
	b. Set the BURST ORDER switch to TEST and then to NORMAL.				
	The OUTPUT PULSES indicator remains illuminated.				
			Refer to figure 36		
	c On the n	nissile error voltage i	monitor set the BEACON—TARGET switch to TARGET		
		The OUTPU	T PULSES indicator is extinguished.		
			Refer to figure 36.		
	d. On the n	nissue error voltage i	momitor, set the BEACON—TARGET switch to BEACON		
4.	Check the	coder command	status indicators.		
	a Set the s	witches as indicated			
	Switch		Setting		
	SELECT		BOTH		
	PITCH		+MAX		
	YAW		+MAX		
	b. Observe	the COMMAND inc			
			PITCH and YAW indicator columns, only the TYPE and cators are illuminated.		
			Refer to figure 36.		

(U) Table 2-20 Daily Radar Coder Checks MTR Continued

		UNCLASSIMED	
rje -	Elperotion	Normal Indication Corrective procedure	
	Continued		
	c Set the SI	LECT switch to PITCH	
		The complete column of YAW indicators is exunguished.	
		Refer to figure 38.	
		The PITCH indicator column TYPE and + MAX indicators lituminated.	are
		Refer to figure 36.	
	d Set the SI	LECT switch to YAW	
		The complete column of PITCH indicators is extinguished.	
		Refer to figure 36.	
		The YAW indicator column TYPE and +MAX indicators illuminated.	are
		Refer to figure 36.	
	e. Set the SI	LECT switch to BOTH and the PITCH and YAW switches to ZERO.	
		The PITCH and YAW + MAX indicators extinguish, and the ZERO is cators illuminate.	ndi-
		Refer to figure 36.	
	f. Set the Pl	ICH and YAW switches to MAX.	
		The PITCH and YAW ZERO indicators extinguish, and the -MAX needs of illuminates.	ndi-
		Refer to figure 36.	
	g. Set the Bi	JRST ENABLE switch to TEST	
		The BURST ENABLE indicator illuminates.	
		Refer to figure 36	
		The complete column of YAW indicators is extinguished.	
		Refer to figure 36.	
		The PITCH -MAX indicator extinguishes, and the ZERO indicatilluminates.	ator
-		Refer to figure 36.	
	h Set the Bi	JRST ENABLE switch to NORMAL.	
		The BURST ENABLE indicator is extinguished.	
		Refer to figure 36.	
		The YAW TYPE and - MAX Indicators are liluminated.	
		Refer to figure 36.	
		The PITCH TYPE and - MAX indicators illuminate.	
		Roler to figure 36.	
	L. Set the Bi	IRST ORDER switch to TEST	
		The BURST ORDER indicator illuminates.	
		Refer to figure 36.	
		**viet to right e bo.	

(U) Table 2-20. Daily Radar Coder Checks-MTR-Continued

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on our control they				
Step	Ope	ntion	Normal indication	Corrective procedure
4.	Cor	ntinued		
			There is no status chang	e for the COMMANDS indicators,
				Refer to figure 36,
	j.	Set the	BURST ORDER switch to N	ORMAL
			The BURST ORDER in	dicator extinguishes.
				Refer to figure 36,
			There is no status chang	ge for the COMMANDS indicators.
				Refer to figure 36
5.	Energize the MTR transmitter.			
	a.	On the	missile track control-power :	supply, rotate the HV SUPPLY knob to START
	ь		the HV SUPPLY-ON switcon of 10 ma on the MAGNET	h and adjust the HV SUPPLY knob to obtain an FRON meter
6	Che	ock the ma	gnetron output pulses.	
	a.	On the r	nissile range indicator, rotate	the SWEEP LENGTH knob fully clockwise.
	a I,	On the barely re	missile track control power smove the receiver noise from	supply, adjust the receiver GAIN knob to just a the range indicator.
			Four distinct pulses are	present,
				Refer to figure 36.
	b.	Set the !	MTR range to center the rang	te notch on the third pulse
				· · · · · · · · · · · · · · · · · · ·

Note The third pulse consists of two closely spaced pulses. Adjust the SWEEP LENGTH knob for better resolution.

Two distinct pulses are in the expanded sweep.

Refer to figure 36.

c. Set the SELECT switch to PITCH

The first pulse in the expanded sweep disappears.

Refer to figure 36.

d. Set the SELECT switch to YAW.

The second pulse in the expanded sweep disappears, and the first pulse reappears,

Refer to figure 36.

e. Set the BURST ENABLE switch to TEST

The pulse in the expansion sweep and the pulse to its right move out in range,

Refer to figure 36

- f. Set the BURST ENABLE switch to NORMAL.
- g Set the SELECT switch to BOTH and the PITCH and YAW switches to ZERO

(U) Table 2-20. Daily Radar Coder Checks-MTR-Continued

Step	Оретийод	Normal Indication		Corrective procedure		
6.	Continued	The third set	of pulses and the	fourth pulse move out in range		
				Refer to figure 36		
		The first two	pulses remain stat			
				Refer to figure 36		
	h. Set the l	PITCH and YAW st				
		The third set	of pulses and the	fourth pulse move out in range.		
				Refer to figure 36.		
		The first two	pulses remain sta			
				Refer to figure 36.		
	. Set the			just to the right of the second pulse		
- 1		Only one puls	se is present in th	e sweep expansion area.		
				Refer to figure 36.		
	J. Set the	BURST ORDER at				
ĺ		A second puls	se appears to the	right of the range notch.		
				Refer to figure 36.		
		The amplitud of the first pr		pulse is within 20 percent of the amplitude		
		_		Refer to figure 36.		
	Note. It may	be necessary to adju	ust the receiver GAI	(N knob so the first pulse is not in receiver satura		
7.	Deenergize the MTR transmitter Rotate the HV SUPPLY knob to START and depress the HV SUPPLY OFF switch					
8.	Reestablish (
	a On the	coder control pan	el, set the switch	es or verify the switch settings as indicated		
		Switch	Setting			
	PREKN		NORMAL			
		AND ORIGIN	NORMAL ZERO			
	PITCH		ZERO			
	BURST	ORDER	NORMAL			
		ENABLE ERY CODE	NORMAL Assigned co	de		
	5. On the	missile error voltag	ge monitor, set th	e PRESET switch to 1.		
ı	c On the	missile track con tate the GAIN knot	itro, power supp	y, set the AGC-MANUAL switch to AGG		
		e missile range in		he SWEEP LENGTH knob fully counter		

(U) Table 2-21 Daily Acquire and Command Checks-MTR

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Step	Operation	Normai indication	orner(ine proceduse			
ı	Prepare for	the acquire and	command checks.			
	a Perform the procedures in table 2-1.1					
	b. On the missue error voltage monitor, sat the switches as indicated					
	Su	vitch	Setting			
	(IF TEST)	—ADJ	ADJ			
	RCVR TES	st	AFC			
	PRESET		1			
		TARGET	BEACON			
			drawer set the switches as indicated:			
		vitch.	Setting			
	TEST DISABLE		TEST			
		ou soud-ol 1 -	DISABLE			
		er controt panet, se witch	et the switches as indicated.			
	PREKNO		Setting			
	BURSTEN		NORMAL NORMAL			
	BURSTOR		NORMAL			
	COMMAN	D ORIGIN	SIMULATED			
	SELECT		BOTH			
	PITCH		ZERO			
	BATTERY	CODE	ZERO Assigned code			
	e. Have the launching control console operator energize the flight simulator group, and set the MANUAL ORDERS switch to AUTO.					
2.	Apply power to the computer.					
	Have the computer operator energize the computer as prescribed in the daily power checks in TM $9-1430-1251-12-1$					
3.	Prepare the battery control console for the acquire and command checks.					
	a. On the battery signal panel-indicator, set the MISSION switch to SA					
- 1	b. Set the MISSILE switch to HE					
	c. Depress the LAUNCHER DATA switch.					
	The LAUNCHER DATA—RELEASED indicator light illuminates.					
			Refer to figure 42, TI 9-1430-1254-20/2			
4.	Energize the	MTR through o	perate.			
	Perform the pr	rocedures in table :	2-13. steps 2 and 4c through c			
5.		flight simulator	The state of the s			
	a Have the launching control console operator select the flight simulator group.					

• Cimit this step if the checks in the preceding tables have been performed in sequence

(U) Table 2-21 Daily Acquire and Command Checks-MTR: Continued

UNCLASSIFIED

0	eration	Normal indication	Corrective procedure
С	ontinued		
_			or light on the battery control console is
		.uminated	Cessa in a come to the sist of Refer to Agure 52, TM 9-148 1254-2012
ь	On the r down por		set the TEST and DISABLE switches to the
			licator, the azimuth and elevation indicato the flight simulator group.
			Perform the launcher position us adjustments in accordance with T 9-1430-1251-10
		The aignal from the fligh and is stable	t simulator group appears in the range not
			 Perform the procedures in tab 2-15.
			(2) Perform the procedures in tab 2-20
		The AZIMUTH ERROR musile track indicator ind	and ELEVATION ERROR meters on the cate 0.
			Perform the procedures in table 2-1
		The COAST Indicator II tinguishes.	ight on the missile track control drawer e
			Perform the procedures in table 2-1
		The RECEIVED SIGNAL	meter indicates at least 5,5.
			(1) Perform the procedures in tak 2-17
			 Request the sunching control co sole operator to check the flig simulator
			(8) Repeat a and b above,
c	On the n		operate and hold the AFC SENS switch in t
		The RCVR TEST meter in	idicates between 45 and 55
			Perform the procedures in table 2-1
ď	Nelegge t	he AFC SENS switch.	

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7.

1 - Table 2-21 Daily Acquir e and Command Checkers MTR Continued

UNCLASSIFIED

Step	the artists Sortin, and only	Color do				
6.	Perform the flight simulator control command ch	ecks.				
	a. On the missive track control drawer, set the TEST swi	tch to TEST				
	b. On the aunching control console, abserve the appropr	nate PITCH and YAW meters				
	The PITCH and YAW meters indicate +0.2G to +0.2G for each channel,					
	Note: A liswitches and controls are located on the ender control pa	ing unwasotherwise indicated				
	c Set the PTTCH switch to MAX and then to + MAX					
	The PITCH meter indicates -8.0 i	to =9.0G and then +8.0 to +9.0G.				
	d. Set the YAW switch to MAX and then to + MAX					
	The YAW meter indicates - 8.0 to	-9.0G and then +8.0 to +9.0G				
	e Set the BURST ENABLE and BURST CRDER switch	hes to TEST				
	The COMMAND BURST indicate sole alluminates	r light on the launching control con-				
	On the missile track control-power NETRON meter increases or remains	er supply, the indication on the MAG- nins constant.				
		Refer to figures 16 and 32				
	f. Set the COMMAND ORIGIN sw tch to NORMAL.					
	g Set the PITCH and YAW switches to ZERQ					
	A Set the BURST ENABLE and BURST ORDER switch	hes to NORMAL				

(U) Table 2 22 Daily Transmitter Checks - TRE

b Return the battery control console and the computer to norma, operation

UNCLASSIFIED

a Rotate the HV SUPPLY knop to START and depress the HV SUPPLY OFF switch

c Notify the launching control console operator that the checks have been completed

Step	Operation	Northal adjection	Current we proceedure
1.	Prepare for	the TRR transmitter checks.	
	a. Perform th	se procedures in table 2-1 1	
	b On the rar	nge rader power control-indicator set the TEST	OPERATE switch to OPERATE.
	c On the cou	interinguages controls indicator, rotate the MOD ckwise.	A HV and the MOD B HV knobs fally
	d On the tar	get track control-power supply, set the TRR PUL	SE WIDTH awitch to LONG
		LOPAR operator energize the LOPAR as pre 55-12-1 and set the LOPAR HIPAR AAR swit	
	Note The cor unless otherwis	errols and and entors to steps 2, brough 4 helow are locat e indicated	ed on the countermeasures control and eator

Orași îhie step sî the chucks in the preceding subles have been performed in sequence

Return the system to normal operation.

(U: Table 2-22 Daily Transmitter Checks-TRR Continued

		UNCLA	SSIFIED
Stop	Operation	Sarmat stication	offee to procedure
2.	Check mag	gnetron A.	
	a. Verify th	at the MAN-AUTO switch is	set to MAN
	b Set the M	IAG SEL switch to A. and depres	s the MAG A - HV ON switch
		The MAG A—READY HV ON indicator light:	indicator light extinguishes, and the MAG A-
			Refer to figure 87
		On the range radar po PRE-HEAT, HOT and I	ower control indicator, the HIGH VOLTAGE— READY A indicator lights extinguish.
			Refer to figure 87
		The HIGH VOLTAGE— control-indicator illum	ON A indicator light on the range radar power unates.
		Communication and a second	Refer to figure 87
	c Adjust th	ae MOD A HV knob to obtain an i	indication in the center of the green block on the MAG A
	I III	The MAG A meter indu	rates in the center of the green block.
		• • • • • • • • • • • • • • • • • • • •	Perform the procedures in table 5-27
			Refer to figure 87
			Refer to figure 83.
	d Operato	the MAG A meter switch to MO	DHV
	d. Operan	The MAG A meter indi-	cates within one-fourth of an inch of the left edge h of the right edge of the green block
		4. Cart O.B.	Perform the procedures in table 5 27
			Refer to figure 87
			Refer to figure 83.
	a Operate	the MAG A meter switch to MO	DCUR
	t. Operation	The MAG A meter indi	icates within one-fourth of an inch of either edge
		0. mo B. 44	Refer to figure 83.
	f On the repeat of	target track control-power supp through e above	ly, set the TRR PULSE WIDTH switch to SHORT and

Check magnetron B. 3.

- a On the target track control-power supply, set the TRR PULSE WIDTH switch to LONG
- b Repeat step 2b through f above for magnetron B, substituting B for A when reference is made to controls and indicators.
- c. Set the TRR PULSE WIDTH switch to LONG.

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1U. Table 2-22 Daily Transmitter Checks TRR Continued

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Вытр	Operation	Normal indication	Controlled propedure		
4.	Deenergize the TRR transmitter.				
	a Rotate th	e MOD A HV and MOD B HV knot	s fully counterclockwise		
1	b. Depress the MAG A-HV OFF and the MAG B. HV OFF switches				
	c. (Deleted)			

	(U) Table 2-23 Daily Target AFC Checks - TRK UNCLASSIFIED					
Step	Operation	Nevmat reducations	Currective procedure			
1.	Prepare fo	or the target AFC checks.				
	z. Perform	the procedures in table 2-1 1				
	b On the r OPERAT		r, verify that the TEST—OPERATE sw tch is set to			
		ountermeasures control-indicator clockwise Set the MANHAUTO	rotate the MOD A HV and MOD B HV knobs fully switch to AUTO			
	d On the t	d On the target track control power supp y, set the TRR PULSE WIDTH switch to LONG				
2.	Check the	target AFC operation.				
	a. On the r	ange radar power control indicator	observe the A and B AFC LOCK indicators.			
		Both indicators are extin	guished.			
			Refer to figure 74.			
	Note Altai indicated	witches controls and indicators are seat	ed on the countermeasures control indicator unless otherwise			
		magnetron A by depressing the M an indication in the center of the g	AG A -HV ON switch Adjust the MOD A HV knob- reen block on the MAG A meter			
			on the panoramic sweep representing magne- other set of pips is sweeping			
			Perform the procedures in table 5-22			
	c Energize	magnetron B by repeating b above	substituting B for A			
		Both sets of frequency pr	ps on the panoramic sweep are stationary.			
			Perform the procedures in table 5-22.			

On the range radar power control-indicator, both the A and B AFC LOCK indicators are illuminated without any noticeable flicker.

Perform the procedures in table

d On the target track control-power supply set the TRR PULSE WIDTH switch to SHORT and then to LONG

^{*}Omet that step of the electra in the proceeding tables have been performed an improve

tt.; Table 2-33 Dmly Target AFC Checks TRR--Continued
UNCLASSIF (E.D.

Step	I De Min	Normal indication	Catto and blone this		
2	Continued				
		2 0 1	oups on the panoramic sweep are stationary. On permitted during the pulse width switching.		
			Perform the procedures in table 5-22		
		Note: A break-sock cycle sweep t me shall be less than	is identified as one sweep of the frequency pips. Those second		
			operate the FREQ switch to take the magnetro Reset the frequency to approximately midband		
			ency paps on the panoramic sweep move smooth ik-lock cycle being observed.		
			Perform the procedures in table 5-22		
	f. Repeat e	above, substituting B for A.			
	g On the c	ountermeasures controlindic	ator set the MAN AUTO switch to MAN		
3	Deenergize the A and B transmitters.				
	n Rotate t	ne MOD A HV and MOD B .	IV knobs fally countere, ockwise		
		the MAG A-11V OFF and th	· ·		

² Omis this step of the checks in the succeeding lables are to be performed in sequence

(L) Table 2-24 Daily Runge System Checks-TRR

ltep	Operation	Normal andication	Corrective procedute				
1.	Prepare for	the TRR range system	checks.				
	Note The	TTR range zero procedur i table	es in table 2-8 must be performed prior to performing the pro-				
	a. Perform	n the procedures in tal	ole 2∙1				
	b On the						
	c On the target track control power supply set the IND switch to R						
i							
	e On the range radar power control indicator, set the switches as indicated						
- 1	S	witch	Setting				
	TEST-	-OPERATE	TEST				
	RANG	E ZERO	OFF				
ŀ	AUTO-	*	MAN				
		R GAIN	LIN-LOG				
	REC II		ANT				
	MAG S		A				
	PULSE		SHORT				

Omit this step. If the checks in the preceding tables have been preformed in sequence

L. Tobje 2.24. Daily Range System Checks-TRR: Continued

Sup	Operation Normal Indication Corrective procedure				
1.	Continued				
	f On the track data processor, set MODE SWITCH to TACTICAL and the BAN SELECTOR switch to BANK 1.	ıĸ			
	g. On the 1F test generator, verify that the OSC switch is set to OFF				
2.	Energize the A and B transmitters.1				
	a On the countermeasures control-indicator, energize magnetron A by depressing t MAG A fiv ON switch Adjust the MOD A HV knob to obtain an indication in t center of the MAG A green block.	he he			
Ì	 Energize magnetron B by repeating a above, substituting B for A 				
	The A and B AFC LOCK indicators on the range radar power contr indicator are illuminated.	ol•			
	Perform the procedures in table 2-2	23.			
	Note The same method of performing the range zero procedures (known datum point (KDP) range zero pulse method) must see used for the TTR MTR, and TRR. The methods must not be termixed.	or .n			
3.	Check the magnetron A range zero in the short pulse mode using a KDP.				
	Note, If a surveyed KDP is not available, proceed to step 7 below				
	a Position the TTR antenna to the coordinates of the KDP				
	b By varying the TTR range, center the KDP signal in the range notch				
	c On the target antenna control group, set the range MAN-ACQUIRE AID-TRAG AID-AUTO switch to AUTO.	CK			
	The KDP signal is present on the lower sweep of the range indicator				
	Refer to figure 51.				
	The TTR RSPU COORD DISPLAY indicates the surveyed range of t KDP.	the			
	Adjust the MAG A SHORT PUL control on the target range synch nizer				
	Refer to figure 72				
4.	Check the magnetron A range zero in the long pulse mode using a KDP.				
	On the range radar power control-indicator, set the PULSE switch to LONG				
	The KDP signal is still present and in the range notch.				
	Reacquire the KDP.				

[‡]Qmit this step if the checks in the projecting tables have been performed in sequence

(U) Table 2-24 Baily Range System Checks—TRR Continued

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		UNCLAS	SIFIED
Stop	Operation	Normal indication	Conective procedure
4	Continued The TTR RSPU COORD DISPLAY indicates the surveyed range of the KDP.		
		ALAYA .	Adjust the MAG A LONG PULSE control on the target range synchro- nizer
			Refer to figure 72.
5.		radar power control indica	short pulse mode using a KDP tor, set the MAG SEL switch to B and the PULSE
		The KDP signal is still i	present in the range notch.
			Reacquire the KDP
		The TTR RSPU COOR	RD DISPLAY indicates the surveyed range of the
			Adjust the MAG B SHORT PULSE control on the target range synchro- nizer
			Refer to figure 72.
6.	Check the ma	ignetron B range zero in the	long pulse mode using a KDP
	On the range	radar power control-indicat	or, set the PULSE switch to LONG
		The KDP signal is still j	present in the range notch.
			Reacquire the KDP
		The TTR RSPU COOL	RD DISPLAY indicates the surveyed range of the
			Adjust the MAG B LONG PULSE control on the target range synchro- nizer
			Refer to figure 72.
	Note: Procee	d to step 11 below if the TRR is	ange zero was established using a KDP
7,	Check the ma	ignetron A range zero in the	short pulse mode using range zero pulses.
			ndicator, set the RANGE ZERO switch to TEST
	and adji	range radar power control- ust the RADAR GAIN knows the lower trace of the range	-indicator, set the RADAR GAIN switch to MAN ob to obtain approximately 1/8 inch of receiver e-indicator.
		At least 15 stable ran	ge zero pulses are present on the range indicator.
			Perform the procedures in table 5-22,

Perform the procedures in table 5-22, step 15 or 16.

c — Set the TTR range to center the eighth range zero pulse in the range notch

(U) Table 2-24. Dally Range System Checks-TRR-Continued

			_	WOLMSOII IL			
Step	Ope	retion	Normal indication		Corrective procedure		
7.	Co	Continued					
	d	On the target antenna control group, set the range MAN 'ACQUIRE AID-TRACK AID-AUTO switch to AUTO					
	е		RADAR GAIN kn timately 1/2 mch.	ob, adjust th	e amplitude of the sele	cted range zero pulse	
	7	Note and this range	record the indica indication as D ₂	tion on the	TTR RSPU COORD I	DISPLAY, Designate	
	g	Set the rai	nge MAN ACQUII	RE AID-TR	CK AID-AUTO swite	h to MAN	
	h	Set the Ti	TR range to center	he fourth rai	ge zero pulse in the rai	ige notch.	
ļ	£.	Set the rai	nge MANACQUII	RE AID-TRA	CK AID-AUTO swite	h to AUTO	
	J.	Note and this range	record the indical indication as D_1 ,	tion on the	PTR RSPU COORD I	DISPLAY Designate	
	k	Subtract I	D ₁ from D ₂ . Recor	d the range d	fference,		
			Range D, equals	the range di	ference for magnetron	Α.	
			1,1		Adjust the MAG	A SHORT PULSE rget range synchro-	
					Refer to figur	72,	
В.	Ch	eck the mag	netron A range zero	in the long	ulse mode using range	zero pulses.	
	а				, set the PULSE switch		
	b	Using the	RADAR GAIN kr	ob on the ra	nge radar control-indic approximately 1/2 incl	ator, adjust the am-	
Į			The range zero p				
					Perform the proce step 15 or 16	dures in table 5-22,	
			The fourth range	zero pulse is	still present in the ran	ge notch.	
					Reacquire the range	zero pulse.	
			The TTR RSP recorded in step	U COORD 7k above	DISPLAY indicates t	ne range dafference	
						A LONG PULSE rget range synchro-	
					Refer to figure	72.	
9.	Che				ulse mode using range		
	а	On the rai			or, set the MAG SEL		
	ð.	On the tar	rget antenna contro O switch to MAN.	ol group, set	the range MAN-ACQ	JIRE AID-TRACK	
			CON	TIDENIS			

(U) Table 2-24. Daily Range System Checks-TRR-Continued UNCLASSIFIED

SIAD	Operation	Normal indication	Corrective procedure				
9.	Continued						
-	c Perform	a step 76 through & ab	ove, substituting B for A				
10.	Check the m	Check the magnetron B range zero in the long pulse mode using range zero pulses.					
		n step 85 above, substi					
	c On the	target antenna contr	ol group, set the range MAN-ACQUIRE AID-TRACK				
11.	Deenergize (Deenergize the A and B transmitters.					
7	a. On the	The second section waters the MOD A HV and MOD B HV					
	b. Depres	s the MAG A-HV OF	F and MAG B-HV OFF switches.				
12.	Reestablish	the switch positions.					
	g. On the	range radar power cor	itrol-indicator, set the switches as indicated				
	1	Switch	Setting				
	TEST-	-OPERATE	OPERATE				
	200 200 1 0	E ZERO R GAIN	OFF LIN-LOG				
	b. On the	target antenna contro	d group, set the RANGE TRACK switch to TTR				

(U) Table 2-25. Daily Lin-Log Receiver Checks-TRR

8tep	Ope	ration Normal Indi	Leation	Contective procedure			
1.	Pre	Prepare for the TRR lm-log receiver checks,					
	a.	Perform the procedur	es in table 2-1.				
	a. 1	counterclockwise.	or, rotate the RADAR GAIN knob fully				
	ь	On the range radar po	wer control-indicator,	set the switches as indicated:			
	1	Switch	Setting				
	1	TEST-OPERATE	TEST				
_		MAG SEL	В				
	1	FREQUENCY A-B	B				
-		RANGE ZERO	OFF				
		AUTO-MAN	MAN				
	1	PULSE	LONG				
		RADAR GAIN	MAN				
		NOISE OUTPUT	RADAR				
		REC INPUT	NOISE L	AMP			

[&]quot;Omit this stop if the checks in the preceding tables have been performed in sequence

(U) Table 2-28. Daily Lin Log Receiver Checks-TRR: Continued

		DMCLASSIFIED						
Step	Оря	ration Normal indication Corrective procedure						
I.	Co	Continued						
		Note. For the remainder of this table, the switches, controls, and indicators are located on the range radar power control-indicator unless otherwise indicated.						
	с	Operate the FREQUENCY DCR-INCR switch to tune MAG B for an indication approximately 3.2 on the FREQ meter.	of					
	d	Set the MAG SEL switch to A and the FREQUENCY A-B switch to A.						
	e.	Operate the FREQUENCY DCR-INCR switch to tune MAG A for an indication approximately 2.8 on the FREQ meter,	of					
	f	On the TRR IF test generator, verify that the OSC switch is set to OFF						
2.	Ch	ck the receiver noise power in Channel A.						
	Ġ.	(Deleted)						
	ь	Adjust the large METER ZERO knob to obtain an indication of 0 on the NOI OUTPUT meter	ISE					
		A NOISE OUTPUT meter indication of 0 can be obtained,						
		Perform the procedures in table 5- step 2.	24,					
	ø,	Set the RADAR GAIN switch to LIN-LOG.						
	The NOISE OUTPUT meter indication is between 40 and 6δ.							
		(1) Operate the FREQUENCY DC INCR switch to slightly change A magnetron frequency. Set RADAR GAIN switch to MAN s repeat b and c above.	the the					
		(2) Perform the procedures in ta 5-24.	ble					
3.	Check the receiver noise power difference between Channel A and Channel B.							
	a.	Set the RADAR GAIN switch to MAN,						
	ь.	Adjust the RADAR GAIN knob to obtain an indication of $60\ \mathrm{on}$ the NOISE OUPUT meter.	JT-					
	C.	Set the MAG SEL switch to B						
		The NOISE OUTPUT meter indication is between 30 and 80.						
		(1) Operate the FREQUENCY DCI INCR switch to slightly change t B magnetion frequency, Set t MAG SEL switch to A and rep- b and c above.	the					
		(2) Perform the procedures in tal 5-24	ole					

(U) Table 2-25. Daily Lin-Log Receiver Checks-TRR-Continued

Itab	Opera	Ation Normal indication	Corrective procedure			
4.	Check the Channel A receiver noise figure in the long pulse mode					
.	a.	Set the MAG SEL switch to A.				
	ь	Rotate the RADAR GAIN knob full	y counterclockwise			
	G	Adjust the large METER ZERO KE OUTPUT meter.	ob to obtain an indication of 0 on the NOISI			
	d	Depress and hold the NOISE LAMP-	ON switch			
1		The NOISE LAMP indi	eator light illuminates.			
			Refer to figure 89			
	e	Adjust the RADAR GAIN knob to	obtain an indication of 100 on the NOISE OUT			
1	f.	Release the NOISE LAMP-ON swit	eh.			
		The NOISE OUTPUT 1	neter indication is 80 or less.			
			(1) Operate the FREQUENCY DCR- INCR switch to slightly change th A magnetron frequency. Repes b through f above.			
			(2) Perform the procedures in tah 4.21, steps 2, 3, and 6. Disregar the target AFC LOCK indicate requirement in step 3.			
5,	Che	eck the Channel B receiver noise figure	in the long pulse mode.			
١ '	a. Set the MAG SEL switch to B.					
	a. 1	Rotate the RADAR GAIN knob ful	ly counterclockwise			
	a.2.	The state of the s				
	ь.	Depress and hold the NOISE LAMP	-ON switch.			
	Ċ		obtain an indication of 100 on the NOISE OU			
	d.	Release the NOISE LAMP-ON swit	ch,			
		The NOISE OUTPUT	neter indication is 80 or less.			
			 Operate the FREQUENCY DCR INCR switch to alightly change ti B magnetron frequency, Repe a 1 through d above. 			
			(2) Perform the procedures in tab 4-21, steps 2, 4, and 6. Disrega the target AFC LOCK inducat requirement in step 4.			
	e.	Set the RADAR GAIN switch to L				

(U) Table 2-25. Daily Lin-Log Receiver Checks-TRR-Continued

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Step	Operation	Nurmal indication	Confective procedure			
6.	Check the receiver noise on the range indicator.					
	a On the targe	t track control consol	e, observe the lower sweep on the range indicator			
		The amphtude of the	receiver noise is between 1/4 and 1/2 inch.			
			Perform the procedures in table 5-24			
	b. Set the PUL:	SE switch to SHORT				
		There is a change in th	e appearance of the receiver noise.			
			Perform the procedures in table 5-24			
	The amplitude of the receiver noise is between 1/4 and 1/2 inch.					
			Perform the procedures in table 5-24			
	c. Rotate the RADAR GAIN knob fully counterclockwise.					
7.	Reestablish the sw On the range rada		tor, set the switches as indicated			
	Switch	Set	ling			
	NOISE OUT: PULSE TEST-OPEI REC INPUT	LON				

(U) Table 2-26 Daily Panoramic Receiver Checks-TRR

Step	Ope	nation Normal Indica	inn. Corrective procedure					
1.	Pre	Prepare for the panoramic receiver checks.						
	a,	Perform the procedures	in table 2·1.3					
- 1	ь.	b. Rotate the PAN GAIN knob fully counterclockwise.						
	С	On the range radar power control-indicator, set the switches as indicated-						
		Switch	Setting					
		TEST-OPERATE	TEST					
		NOISE OUTPUT	PAN					
		REC INPUT	NOISE LAMP					
		PAN GAIN	MAN					

^{*}Omis this step if the checks in the preceding tables have been performed in sequence

(U) Table 2-26 Daily Panaramic Receiver Cheche, TRR, Con, muca

Stop	Operation	N in indicate	л	Corrective procedure					
2.	Check the	receiver noise power	un the panoramic	receiver					
	 a. Adjust the small METER ZERO know to obtain an indication of 0 on the N OUTPUT meter 								
		A NOISE OUTPUT meter indication of 0 can be obtained							
				(1) Operate the FREQUENCY DCR INCR switch to slightly change the A and B magnetron frequencies. (2) Perform the procedures in table 5 25, step 20					
	h. Set th	e PAN GAIN switch	to LIN-LOG	,,					
		The NOISE (OUTPL T meter inc	lication is between 60 and 80.					
		THE POOL		(1) Operate the FREQUENCY DCR— INCR switch to slightly change the A and B magnetron frequencies. Set the PAN GAIN switch to MAN and repeat a and b above					
				(2) Perform the procedures in table 5:25					
3	Check the	Check the receiver noise figure for the panoramic receiver							
	a. Set th	e PAN GAIN switch	s ta MAN						
- 1	b. Depre	se and bold the NO							
- 1		The NOISE I	LAMP indicator lig	ht filuminates.					
- 1				Refer to figure 89					
				on of 100 on the NOISE OUTPUT meter					
	d, Releas	se the NOISE LAME							
		The NOISE (DUTPUT meter in	lication is 60 or less.					
				 Operate the FREQUENCY DCR— INCR switch to sughtly change the A and B magnetron frequencies. Repeat steps 1b, 2a, and a through d above 					
				(2) Perform the procedures in table 4-24, steps 1 and 2.					
	e Rotat	e the PAN GAIN kn	ob fully counterel						
4	Check the	pan receiver present	ation on the count	ermeasures control-indicator,					
	a. Set th	e switches as indicat	ted						
		Switch	Setting						
		E OUTPUT NPUT SAIN	OFF ANT LIN-LOG						

(U) Table 2 26, Daily Panaramic Receiver Checks-TRR-Continued

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Step	Operation	Normal addication	Corrective procedure
4.	Continued		
	b Observe	the upper sweep of the cour	ntermeasures control indicator
			noise is between 1/8 and 1/4 of an inch in ampli-
			Perform the procedures in table 5-25, step 5.
		The frequency pips are amplitude,	stationary and approximately 3/4 of an inch in
			Perform the procedures in table 5-25, step 5.
ű,		e switch positions. -OPERATE switch to OPEI	rate,

(U), Table 2-27 Daily Countermeasures Control Indicator Checks-TRR

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		CONFID	ENTIAL				
Step	Operation	Normal indication	Corrective procedure				
1	Prepare f	or the countermeasures control-	indicator checks,				
	a. Perf	orm the procedures in table 2-1.	1				
	b On 1	b On the range radar power control-indicator, verify that the TEST—OPERATE sw is set to OPERATE					
	c On i	the target track control-power s t to LONG	apply, verify that the TRR PULSE WIDTH switch				
- 1	d. Set i	the TTR range to 200,000 yards					
	Note: Fo	or the remainder of this table, all with the remainder of this table, all with the remainder of this table, all with the remainder of th	witches, controls, and meters are located on the countercated.				
	e. Set	the MAN-AUTO switch to AU	07				
2.	Energize i	the A and B transmitters,					
	a Rota	ite the MOD A-HV ON knob fi	Illy counterclockwise				

'Omit this step if the chacke in the preceding tables have been performed in sequence.

Depress the MAG A-HV ON switch

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t Table 2.27 Daily Countermeasures Control Indicator Checks. TRB ton need

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Slep	Operation Normal Indication	Corrective procedure		
2.	Continued			
	c Ad, ast the MOD A HV knob to obtain an india green block	car on in the center of the MAG A mete		
	d Repeat a through c above, substituting B for A			
3.	Check the presentation of the range sweep on the co Observe the lower range sweep	ountermeasures control indicator		
	The presentation is well focused will	th minimum distortion,		
		Adjust the TRR FOCUS mo TRR INTENSITY controls Is required, adjust the ASTIGMA TISM control inside the counter measures control-indicator (left rear)		
		Refer to figure 75.		
	The range sweep is 1/2 inch below trol-indicator	the center of the countermeasures con		
		On the countermeasures video amplifier, adjust the RG VERT CENT control		
		Refer to figure 75		
	The range sweep starts just inside the left edge of the indicator, with the range notch 1/16 inch from the right edge of the indicator.			
		 On the countermeasures range sweep generator, ad- just the SWP LG variable resistor fully counterclock- wise 		
		(2) On the countermeasures range sweep generator, ad just the HOR CENT control so that the sweep starts just inside the left edge of the indicator		
		(3) On the countermeasures range sweep generator, adjust the MAX SWP RG variable resistor so that the sweep duration extends 1/16 inch beyond the range notch		

et , Tabu 27 Dady Counterment was Control Indicator Checks: TRP Continued

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Stee	уурга тол	Some and estable	E street we procedure		
3	Continued				
			(4) Adjust the SWP LG variable resistor so that the trailing edge of the sweep is just inside the right edge of the indicator. It may be notes sary to readjust the HOR (FNT variable resistor Refer to figure 75		
		The transmitter pulse is 3/4 inch	in amplitude.		
			On the countermeasures video amplifier, adjust the RG VIDEO GAIN variable resistor		
			Refer to figure 75.		
		The receiver noise amplitude is	petween 3/8 and 5/8 of an inch,		
			Perform the procedures in table 2:25		
4.	Check the presentation on the panoramic sweep.				
	Observe the	Observe the upper panoramic sweep.			
	The presentation is well focused with minimum distortion.				
			Adjust the PAN FOCUS and PAN INTENSITY controls. Refer to figure 75		
		The pannamic sweep is 1/2 inch above the center of the countermeasures control-indicator.			
			On the video amplifier, adjust the PAN VERT CENT control Refer to figure 75.		
		The sweep starts just inside the	left edge of the indicator		
			On the panoramic sweep genera tor, adjust the HOR CENT variable resistor		
			Refer to figure 75		
		The sweep extends just to the right edge of the indicator.			
			On the panoramic sweep genera tor, adjust the IND SWP LC variable resistor		
			Refer to figure 75		
5,	Check the a	djustments of the panoramic oscillat	or circuits.		
D,			or circuits. the FREQ switch to tune magnetron.		

the low frequency stop

Step

5.

Operation

Continued

Corrective procedure

(U) Table 2-27 Daily Countermeasures Control Indicator Checks: TKR -Continued

CONFIDENTIAL

Normal indication

_		
	The A SEL indicator is illuminated,	
		Perform the procedures in table 4-25
a. I	Set the MAG SEL switch to B, and operate the FREC the low frequency stop	switch to tune magnetron B to
	The A SEL indicator remains illuminated,	
		Perform the procedures in table 4.25
b c	Operate the FREQ switch to tune magnetron B to the h Observe the panoramic sweep.	igh frequency stop.
	A pair of frequency pips appears within 1/8	inch of the sweep ends.
		On the penoramic sweep generator, adjust the PAN SWP AMP variable resistor. If the requirements cannot be met, perform the procedures in table 3-15, step 4
a	Sot the MAC OPT	Refer to figure 75
u	and medicite's sorb	
	During magnetron tuning, a single pair of without jumping or disappearing.	frequency pips moves smoothly
		Perform the procedures in table 2.23
ę	Set the MAG SEL switch to B and operate the FREQ the low frequency stop.	switch to tune magnetron B to
	During magnetron tuning, a single pair of without jumping or disappearing.	frequency pips moves smoothly
	b c	The A SEL indicator remains illuminated. b Operate the FREQ switch to tune magnetron B to the high operate the panoramic sweep. A pair of frequency pips appears within 1/s d Set the MAG SEL switch to A, and operate the FREQ the high frequency stop During magnetron tuning, a single pair of without jumping or disappearing. e Set the MAG SEL switch to B and operate the FREQ the low frequency stop. During magnetron tuning, a single pair of

Observe the panoramic sweep

A pair of frequency pips appears within 3/16 inch of the sweep ends.

2.23

(1) On the TRR antenna support base, set the ANTEN NA switch to DISABLE and the BLOWER switch to OFF Perform the procedures in table 3-14, steps

Perform the procedures in table

MAG B variable resistor R5. Perform the procedures in

table 4-20

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U) Table 2:27 Daily Countermeasures Control Indicator Checks—TRR: Continued

	CONFIDENTIAL					
Step	Onematon	Noputal and casport	Corrective procedure			
5,	Continued					
			4, 5, and 9g Repeat a through / above			
			(2) Perform the procedures in table 3-15 step 4. Repeat a through f above Refer to figure 75			
	g Repeat					
6,		edestal almement on the panoram	•			
	a Set the MAG SEL switch to B and operate the FREQ switch to tune magnetron B to cause the frequency pips for both magnetrons to coincide					
	Note If m. frequency	agnetion B uses not tune low enough	h it may be necessary to nerease he magnetion A			
	b. Set the l	MAN-AUTO switch to MAN				
		A pedestal appears under than the frequency pips.	he frequency pips, and the pedestal is wider			
			Perform the procedures in step 7 below			
		The pedestal amplitude is approximately 1/4 inch.				
			On the panoramic aweep genera tor, adjust the PED AMP variable resistor for a 1/4-inch pedesta amplitude			
			Refer to figure 75.			
	c. Set the M	AAG SEL switch to A.				
- 1	The pedestal under the frequency pips is wider than the frequency pips.					
			Perform the procedures in step 7 below			
	The pedestal did not shift horizontally more than 1/8 inch					
			(1) On the range antenna sup- port base, set the ANTEN NA switch to DISABLE and the BLOWER switch to OFF			
			(2) On the tuning drive in the range receiver-transmitter, adjust FREQ MTR TRIM			

U, Table 2-27 Daily Countermeasures Control Indicator Checks- TRR: Continued

	CONFIDENTIAL				
Step	Op	mention.	Normal indication	Corr	rective procedure
6.	Co	ontinued			
				(3)	Set the BLOWER switch to ON and the ANTENNA switch to NORMAL.
	ď	Set the MA	G SEL switch to B		
	e	Using the each stopp	FREQ switch tune magnetror ing point, set the MAG SEL at	A in steps through	out the frequency range. At
			The pedestal under the m centered about, the freque may extend beyond the edg	mey pup at any ste	ncy pips is wider than, and opping point. (The pedestal
					form the procedures in step
	7	Set the MA	G SEL switch to A.		
	8	Repeat e al	ove, substituting B for A		
	h	With both the frequer	magnetrons tuned to the high icy pips to coincide	frequency stops, t	une the magnetrons to cause
	6.	Set the MA	G SEL switch from A to B an-	d back to A	
			The pedestal does not shift i	norizontally more (I	han 1/8 inch
				(1)	Perform the corrective pro- cedure in c (1) above
					On the tuning drive in the range receiver-transmitter, adjust FREQ MTR TRIM MAG B variable resistor R7 and repeat a through above to eliminate any interaction. Perform the procedures in table 4-20
					Repeat the corrective pro- cedure in c (3) above.
			The A SEL or B SEL ind. MAG SEL A or MAG SEL B	icator illuminates i	
					Refer to figure 71 1
- 14	í. ž.	Set the MA	N-AUTO switch to AUTO		
			The pedestal disappears,		
	į,	Denocal to	A.= 0 !-1		Refer to figure 71 1.
-	2"	Proceed to s	ech o neiom		

Adjust the panoramic sweep pedestal circuits.

a. Tune magnetron A to the low frequency stop and magnetron B to the high frequency stop.

(U) Table 2:27 Daily Countermeasures Control Indicator Checks-TRR-Continued

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1	Operation	Notifical profession	Corrective procedure		
Т	Continued				
	b Venfy th	out the MAN AUTO switch is set	to MAN and the MAG SEL switch is set to A		
	-	A pedestal is centered under th	ne magnetron A frequency pips		
			On the panoramic sweep genera tor, adjust the PED POS (LOW variable resistor		
			Refer to figure 75		
1		The pedestal amplitude is appr	oximately 1/4 inch,		
			On the panoramic sweep genera tor, adjust the PED AMI variable resistor		
			Refer to figure 75		
	c Set the N	IAG SEL switch to B.			
		The pedestal is centered und pedestal may extend beyond to	ler the magnetron B frequency pips. (The be edge of the sweep.)		
			On the panoramic sweep genera tor, adjust the PED POS (HIGH variable resistor		
1			Refer to figure 75.		
	d. Repeat b and c above until no further adjustments are required				
	e Operate sweep	the FREQ switch to tune magne	tron A to approximately the center of the		
1	f. Set the M	IAG SEL switch to A			
		The pedestal is under the ma the frequency pips.	gnetron A frequency pips and is wider that		
			On the panoramic sweep genera tor, adjust the PED L EDGE ADJ variable resistor and the PED R EDGE ADJ variable		
			resistors as required		
	slightly sl	MAN—AUTO switch to AUTO and hift the pedestal using PLD POS (I R EDGE ADJ adjustments to mee	repeat step 6 above. It may be necessary to		
+		n no loss circuit operation.			
			obtain target video on the lower indicator		
	b. Operate a	nd hold the PAN switch to NO LC	OSS.		
		The target video on the lower s			
			Refer to figure 88.		

(f.) Table 2-27 Daily Countermeasures Control Indicator Checks—TRR - Continued CONFIDENTIAL

	CONFIDENTIAL					
Step	Operation		Normal Indication	Correctly procedure		
8.	Co	ntinued				
			The frequency pips on (the apper sweep are stall present and stable.		
- 1				Refer to figures 71.1 and 75.		
			Both MAG A and MAG	B meters indicate in the green blocks.		
				Refer to figure 73.		
	C.	Release t	he PAN switch			
	ď.	Set the M	AN-AUTO switch to MAN	ī.		
9.	Deenergize the A and B transmitters.					
	a			IV knobs fully counterclockwise		
	b	Depress ti	ne MAG A HV OFF and M	AG B-HV OFF switches		

(U) Table 2-28 Daily Automatic Channel Selector Checks-TRR

Step	Open	tion Normal find	fication Corrective procedure		
1	Prepa	Prepare for the automatic channel selector (ACS) checks.			
	a.	Perform the procedur	res in table 2-1		
	ь	On the range radar po	ower control indicator, set the switches as indicated		
		Switch	Setting		
		TEST-OPERATE	TEST		
		MAG SEL	В		
		FREQ A -B RANGE ZERO	B		
- 1		AUTO-MAN	OFF MAN		
		PULSE	LONG		
		VOISE OUTPUT	RADAR		
	i	REC INPUT	NOISE LAMP		
	e. (Operate the FREQ sy he FREQ meter	witch to tune MAG B for an indication of approximately 3.2 o		
	d S	et the MAG SEL swit	tch to A and the FREQ A-B switch to A		
	e (Operate the FREQ switch to three MAG A for an indication of approximately 2.8 on the FREQ meter			
	f = 0	n the TRR IF test ge	nerator verify that the OSC anitab in and in OSD		
2.	f On the TRR IF test generator verify that the OSC switch is set to OFF Perform the ACS checks.				
	a C	in the ACS unit, set th	he METER MONITOR switch to IN LEV		
	b N	omentarity operate th	he ACS SENSITIVITY switch to the X10 position		

Omit this step if the checks in the proceding tables have been parformed to sequence

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(U) Table 2-28. Daily Automatic Channel Selector Checks—TRR -- Continued

P	Operation	Normal Industries	Car	seet on procedure	
	Continued				
ı		The ACS meter indicates a value with	hin the l	imits of 140 and 160	
				Operate the FREQUENCY D C R-I N C R switch to slightly change the A magnetron frequency.	
			12	Perform the procedures in table 4-26, steps 2 and 3	
		ETER MONITOR switch to OFF			
	a. On the ran	ige radar power control indicator, set the NOIS	E OUTP	UT switch to OFF	
	e Momenta	ruy depress the NOISE LAMP-ON switch			
		The TEST 1 indicator on the ACS uni			
			(1)	Perform the procedures in table 4-25, step 7a through d Repeat e above.	
				Perform the procedures in table 4-25	
		The TEST 2 indicator on the ACS permissible).	unit is	extinguished (flickering	
			4-2	form the procedure in table 5 step 5b through e	
	f On the ACS unit, note the ACS attenuator switch settings, then remove 6 db. The TEST 2 indicator is illuminated.				
			and tab	f 6 db to the ACS attenuator. I perform the procedures in le 4-25, step 56 through e.	
	g Return the	ACS attenuator switches to the settings noted	in Fabovi	ė.	
	h. On the range radar power control-indicator, set the MAG SEL switch to B.				
		On the countermeasures control-in extinguished and the B SEL indicator	dicator is illum	, the A SEL indicator is inated.	
			Ref	er to figure 71.1.	
	On the rang	re radar power control-indicator, set the AUTO	MAN	switch to AUTO.	
		On the countermeasures control-in illuminated and the B SEL indicator in	dicator	the A SEL indicator in	
				orm the procedures in table	

(U. Table 2-28 Daily Automatic Channel Selector Checks: THR-Continued

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Step	Operation Normal adjection	Currective procedure			
3.	Reestablish the switch positions.				
	On the range radar power con	ntrol-indicator, set the switches as indicated.			
	Switch	Setting			
	TEST-OPERATE	OPERATE			
	REC INPUT	ANT			
	MAG SEL	A			
	AUTO-MAN	MAN			

(U. Table 2-29. Daily Remote Switching Checks-TTR and TRR

UNCLASSIFIED

Step	Operation	Normal Indication	Corrective procedure
1.	Check the rem	note transmitter control local-	remote operation
	a On the remot	e transmitter control, set the LOC	REM switch to LOC
		On the remote transmitter culluminated.	ontrol, the back lighting for all switches is
			Verify that the DIMMER control is fully clockwise
			Refer to figure 65.
	6. Set the LOC-	REM switch to REM	
		The back lighting for all swi-	tches extinguishes.
			Refer to figure 65.
2.	Check the TRI	R test-operate indicator.	
	a On the range	radar power control-indicator, set	the TEST OPERATE switch to TEST
			he countermeasures control-indicator
			Refer to figure 89.
	b. Set the TEST	OPERATE switch to OPERATE	
		The TEST indicator extingui	shes.
			Refer to figure 89.

(U) Table 2-30 Dady Track Data Processor Checks

Skap	Operation	Normal préécation	Corrective procedure			
l.	Prepare for the track data processor checks.					
	a. Perform the procedures in table 2-1.1					
	b. Insure that the PLX CORRECTION switch on the range synchronizer is set to NORM					

*Omit that step if the checks in the preceding lables have been performed in sequence

1U. Table 2-30. Daviy Truck Data Processor Checks-Continued

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		OI FOLMSON IED			
Strji	Operations Narroad unducations	Corrective precediare			
1.	Continued				
	c On the range radar power contro. RANGE ZERO switch to OFF	-indicator, set the TEST OPERATE switch to TEST and t			
	d On the track data processor, verify	that the switches are set as indicated.			
	Switch	Setting			
	MODE SWITCH	TACTICAL			
	BANK SELECTOR TRR/TTR PARALLAX (YDS)	BANK 1			
	MTR/TTR PARALLAX (YDS)				
	e On the missile track control draw	· · · · · · · · · · · · · · · · · · ·			
2.	Check the dc power.	***************************************			
401		bserve the TRACK DATA PROCESSOR +15V 15V +15			
	-12V, +5V, and -5V indicators an				
	The green LED	ndicators are illuminated			
		Perform the TDP voltage ma			
		surements in table 5-30, step			
		Refer to figure 78.1			
	The fuse indicat	ors are not illuminated.			
		Refer to figure 78 1			
3.	Check the track data processor operation.				
	 Observe the track data processor: 				
	The RUN indica	tor is illuminated.			
		Refer to figure 78.1			
		ICAL indicator is not illuminated. On the target tra upper center door, the TDP FAULT indicator is i			
	The POSITION	DIFFERENCE (YDS) indicators are not illuminated.			
		(1) On the track data process			
		momentarily operate t RESET switch			
		(2) Perform the procedures table 5-29, steps 3 and 4.			
	Note The track data DIFFERENCE indica	a processor generates error messages which are displayed on the POSITI tors. An error message is always and cated by Δx and $caning EE$			
	2 -	-indicator, set the RANGE ZERO switch to TEST			
	The track data indicate as follo	processor POSITION DIFFERENCE (YDS) indicate ws:			
	$\Delta \mathbf{h} = \mathbf{C}0$				
	Δx 66 Δy = 40				
	2y 40	Perform the procedures in ta			
		\$ 12 thing are broces are on to			

5-29, step 4.

*L., Table 2-30. Daily Track Data Processor Checks-Cont. aued

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Blep	Operation	Normal multi-actors	Current to procedule		
3.	Continued				
		The NON-TACTICAL and RUN indica	tors are illuminated.		
			Refer to figure 78.1		
	c On the ra	inge radar power control and cetor set the TEST	OPERATE switch to OPERATE.		
		The NON-TACTICAL indicator is not i			
			Refer to figure 78 1		
		The RUN indicator is illuminated			
			Refer to figure 78.1		
	The POSITION DIFFERENCE (YDS) indicators are not illuminated				
			On track data processor momer tarily operate the RESET switch if no data is received from the TTR RSPU, the POSITION DIFFERENCE AND INDICATE STATES AND THE		

4. Reestablish the switch positions.

On the range radar power control-indicator set the RANGE ZERO switch to OFF

(b) Table 2-31 Daily Remote Synchronization Checks

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Step	Operation	Nerme) (ndiretion	Confective procedure			
j,	Prepare f	Prepare for the remote synchronization checks.				
	a. Perform	the procedures in table 2-1.1				
		hat the LOPAR and HIPAR dail ion operators.	y power checks have been performed by the appropriate			
	c Verify th	hat the LOPAR and HIPAR ante	nnas are both rotating.			
	d. In the di	rector station, set the TEST-N	ORM switch on the acquisition video mixer to TEST			
	e Verify ti	hat the battery control console a	equisition range is set to less than 220,000 yards			
2.	Check the	LOPAR/TTR synchronizati	on.			
	a. On the b	enttery control console, set the L	OPAR HIPAR/AAR switch to LOPAR			
		On the pulse generate indicator is illuminate	r-indicator in the TTR console, the green LOPAR ed.			
			Refer to figure 65.			

Out that step if the checks in the preceding tables have been performed in requision

(U) Table 2-31 Daily Remote Synchronization Checks - Continued

ep.	Operation	Normal indication	f arms an providery		
2.	Continued				
	b Observe ti	he B-scope presentation on the TTR c	pnsole		
		A focused presentation is pr			
			Adjust the B-scope front pan- controls as required		
			Refer to figure 34, T1 9-1430-1254-20/2		
		The horizontal acquisition r	ange circle is continuous and stable.		
			On the TTR track synchronize verify that the TEST switch is at to NORMAL. Adjust the FREF LOPAR control maximum cock wise, then slowly countercock wise just until the range circl becomes continuous and stable Adjust the control approximatel an additional 1/8 turn counterclockwise.		
			Refer to figure 34, TN 9-1430-1254-20-2		
	Check the I	IIPAR/TTR synchronization.			
	a On the battery control console, set the LOPAR - HIPAR AAR switch to HIPAR AAR				
	On the pulse generator-indicator, the green HIPAR indicator is alluminated.				
			Refer to figure 65		
	b. Observe th	ne B-scope presentation			
	The horizontal acquisition circle is continuous and stable.				
			On the TTR track range syn- chronizer, adjust the FREG HIPAR control maximum clock- wise, then slowly counterclock- wise just until the range circle becomes continuous and stable Adjust the control approximately an additional 1/8 turn counter- clockwise		
			Refer to figure 34, TM 9-1430 1254-20.2.		
1		system to the desired status.			
			NORM switch to NORM		
	O Have the a	ppropriate acquisition operators retu	in the LOPAR and HIPAR to the desired status.		

(U) Table 2-32. Daily Simultaneous Tracking Checks-TTR, MTR and TRR

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	UNCLASSIFIED			
Step	Орегация	Noticed indication	Corregion procedure	
I.	Perform the Perform the	initial simultaneous tracki procedures in table 2.1	ng checks.	
2.	king checks,			
	a. On the		oup, set the PEST switch to operate (down) and the	
	b Set the checks.	magnetron frequency to	the frequency used to perform the TTR range zero	
3	Prepare the M	ITR for simultaneous trac	king checks.	
	a On the r	n ss. e track control drawe	er set the switches as indicated	
	Switch		Setting	
	TEST		LSI	
	DISABL	€ d.	W.A	
	RANGE	N	ORMAL,	
	b On the r	nissile error voltage m init	or, set the BhACON- TARGET switch to TARGET	
	On the target	RR for simultaneous track range synchronizer, set r power contro indicator	the PLX CORRECTION switch to NORMAL. On set the switches as indicated	
	Switch		Setting	
	TEST-OPER.		TEST .	
- !	RANGE ZER)	OFF	
	AUTO-MAN RADAR GAII	.r	MAN	
	REC INPUT	1	LIN-LOG ANT	
	Prenance the ter	alı data annı e		
	Prepare the track data processor for simultaneous tracking checks.			
	MODE S	TOTAL WISHE LEACH	the BANK SELECTOR switch to BANK 1 and	
		The RUN and NON- messages are present o	PACTICAL indicators are illuminated. No error in the Δx , Δy , and Δh indicators.	
			Perform the procedures in table 2-30	
1		ar bir ibelie b	t parallax and MTR/TTR parallax are set into the	
	Energize the T	PR, MTR, and TRR trans	mitters,	
	a On the tale and depresent	rget track controspower	Supply, rotate the HV SUPPLY knob to START switch Adjust the HV SUPPLY knob to obtain AGNETRON meter white block	

Omit this step if the checks in the preceding tables have been performed in sequence.

an indication in the center of the MAGNETRON meter white block

4U: Table 2-32 Daily Simultaneous Tracking Checks-TTR MTH, and TRR Continued

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			IEU	
Step	Оригилия	Nerval infection	Corrective protedure	
6.	Continued			
	the HV S		ate the HV SUPPLY knob to START and depres SUPPLY knob to obtain an indication of 3 ma o	
	fully coun MOD A H	terclockwise, and depress the MAG A	or rotate the MOD A HV and MOD B HV knot A HV and the MAG B HV switches. Adjust the mindication in the center of the green block on the	
7.	Acquire an	d track a moving target with bot	th tracking radar systems.	
	Note: To expe	edite this check, targets may be designated fr	rom the hattery control console.	
	a Acquire and track, in the automatic mode, the same target with the TTR and MTR at a range greater than 20,000 yards. For the target to be considered valid, the MTR RECEIVED SIGNAL and TTR TARGET SIGNAL STRENGTH meters should indicate an average value greater than 2 and 20, respectively. The target elevation angle for each radar should be greater than 25 mile above terrain and physical object masking.			
	b If possible	, the selected target should be acquire	ed in a different quadrant each day	
8.	Perform the simultaneous tracking check with the MTR and TTR.			
	a. On the target track control power supply, set the TTR PULSE WIDTH switch to SHORT			
	 b. Observe the Δx, Δy, and Δh indicators on the track data processor 			
	In each coordinate, at least 80 percent of the indications are within the tolerance of 0.5 yards per each 1,000 yards of the target range.			
			(1) Verify that the target meet the requirements given is step 7a above.	
			(2) Perform the procedures us table 4-27	
	c. Set the TI	TR PULSE WIDTH switch to LONG.	Repeat b above	
9.	Perform the	e simultaneous tracking test usu	ng the MTR, TTR, and TRR.	
	a. On the rai		the MAG SEL switch to A and the PULSE switch	
	b. On the tar	get antenna control group, set the RA	ANGE TRACK switch to TRR	
	c Observe the Δx, Δy, and Δh indicators on the track data processor			
	In each coordinate, at least 80 percent of the indications are within the			
		tolerance of 0.5 yards per ea	ich 1,000 yards of the target range.	
i			(1) Verify that the target meet the requirements given in step 7a above.	
			(2) Perform the procedures n table 2-24.	
			(3) Perform the procedures n	

d. Set the PULSE switch to LONG and repeat c above

table 4-27

it Table 2.32 Bady Simultaneous Tracking Checks-TTR MIR and TPR Continued

Step	Operasi	t1 D,	Normal indication	Confective procedure
9.	Conti	nued		
	6.	Set the	MAG SEL switch to B and r	epeat c above
	- 6	Set the	PULSE switch to SHORT ar	id repeat c above
	ar.	Termin	ate tracking of the target.	
10.	(Dele	ted)		
11.	Deen	ergize t	he transmitters.	
		and de	press the HV SUPPLY-OFF	supply, rotate the HV SI PPLY knob to START switch,
	ь	On the	m sade track control-power	supply, rotate the HV SUPPLY knob to START switch
	c.	On the	CONTRACTOR CONTROL IT	idicator, rotate the MOD A RV and MOD B HV press the MAG A -HV and MAG B-HV switches.
12.	Rees	tablish	the switch positions.	
	a	TEST	switch to TEST	p, set the RANGE FRACK switch to TTR and the
	6	On the		olindicator set the TEST-OPERATE switch to
	l c	On the	track data processor, set MC	DDE SWITCH to TACTICAL
	ď	On the	missile error voltage monito	r, set the BEACON TARGET switch to BEACON

CHAPTER 3 (C)

WEEKLY CHECK PROCEDURES

Note. In some insurince, the week's check may be the same as a daily check and a not inted in this chapter. Refer to the week's using in the table of contents for a sequentum is inglof all week's check procedures to be performed.

(U) Table 3-01 Weekly Power Checks

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Men	Operation	Notinal indication	Corrective procedure	
	Perform the	procedures in table 2-1		

U. Table 3.1. Weekly Pressuruation and Dehamidification Checks-TTR MTR and TRR

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Step	Opezation	Nurmai and ration	Carre ave procedure	
	Auto This pro to each	cedure is applicable to the	TTR MTR and TRR using controls and indicate	ars pecubar

Prepare for the pressurization and dehumidification checks.

- a. Perform the procedures in table 2-2, steps 1, 2a, and 3a
- b. Check the compressor motor operation.

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The compressor motor operates when the pressure meter indicates a value between the limits of 9 and 12 (MTR and TTR)

Refer to figure 16 (MTR)

Refer to figure 47 (TTR,

The compressor motor operates when the STORAGE PRESS meter indicates a value between the limits of 44 and 54 (TRR)

Warning. 120 vac is present on the fuses located near the OPERATING microswitch on the pressurization unit.

If the power indicator light illuminates and the compressor motor does not run, operate the reset on the OPERAT-ING microswitch (located behind the fuses).

Refer to figure 73 (TRR)

The compressor motor stops running when the pressure meter indicates a value between the limits of 13 and 17 (MTR and ITR)

> Refer to figure 16 (MTR) Refer to figure 47 (TTR).

The compressor motor stops running when the STORAGE PRESS meter indicates a value between 58 and 68 (TRR).

Refer to figure 73, TRR)

a shie I was her Press, ex at an and elehamidalises an Checke TIR WIL and Tilk Cor more

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Surg	Operation Normal indication Corrective procedure
2	Check the TTR and MTR waveguide leakage
	a Set the compressor power ON OFF switch to OFF just after the motor stops running After 2 minutes, observe the pressure meter
	The indication does not decrease to less than 10 (MTR and TTR)
	*Check the waveguide system for leaks.
	b. Set the power ON-OFF switch to ON
3.	Check the TRR waveguide leakage.
	a. Note the compressor-dehydrator OUTLET PRESS meter
	The OUTLET PRESS meter indicates a value between the limits of 20 and 25.
	Refer to figure 73
	b Observe the range receiver-transmitter waveguide pressure meter
	The wavegude pressure meter indication is within 4 of the indication noted in a above
	*Check for waveguide leaks.
4	Check the humidity. Observe the HUMIDITY INDICATOR.
	The HUMIDITY INDICATOR is dark blue.
	Perform the procedures in steps 5 and 7 below (TTR and MTR).
	Perform the procedures in steps 6 and 7 below (TRR).
	Note: If the conditions of step 4 are met, omit steps 5 through 8 below
15	Purge the waveguide on the TTR and MTR
	a Check the transparent air tubes to see if water is present. Remove any water found
	b. Break the waveguide connection at the magnetron.
	c Periodically allow air pressure to build up and discharge by opening and closing the waveguide section.
	d. Continue the procedure in c above for 10 to 15 minutes.
	e. Reconnect the waveguide to the magnetron.
6	Purge the waveguide on the TRR,
	 Disconnect the quick-disconnect waveguide section between the RF unit and the reflector
	b Periodically allow the air pressure to build up and discharge by opening and closin the waveguide section.
	c. Continue the procedure in b above for 10 to 15 minutes
	 Reconnect the quick-disconnect waveguide section between the RF unit and the reflector

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		DINDLAG		
5iep	Operation	Normá jede zuen	Corrective procedure	
7.	Recheck the			
	Observe the	HUMIDITY INDICATOR		
		The HUMIDITY INDIC		
			Perform the procedures in step 8a, b, and d below (TTR and MTR)	
			Perform the procedures in step $8a$, c , and d below (TRR).	
-	Note. If the	e conditions of step 7 are met, om:	st step 8 below	
8.	Dry the equ	ipment.		
1	a Repeat step 5g and b above for the TTR and MTR, or step 6g above for the TRR			
	Note: One cycle takes approximately 3 hours: tanks transfer approximately every 90 m tiples.			
	b Let the TTR and MTR dehum.differs operate for one complete cycle			
			Refer to figure 16 (MTR)	
1			Refer to figure 47 (TTR)	
		drator eyeung should occur ever ing, the rush of air is audible	y 90 seconds of compressor motor operation. During de-	
		e TRR compressor-dehydra hydrator is cycling	tor operate approximately 4 hours. Insure that	
			Refer to figure 73 (TRR).	
	d Repea TRR	t steps 5e and 7 above for th	ne MTR and TTR, or steps 6d and 7 above for the	
9.	Return the	equipment to normal operati	оп,	
	a. Set the	e BLOWER switch to ON		
	b. Set the	ANTENNA switch to NOR?	MAL.	

(U; Table 3-1-1. Weekly Leveling Checks-TTR, MTR and TRR

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Step	Operation	Normal indication	Corrective procedure
	Perform the	procedures in table 2-3.	

(U) Table 3-2. Weekly Presentation Checks-TTR

Step	Operation	Normal Indication	Corrective procedure
1.	Perform the procedures in table 2-4.		

(U) Table 3 2. Weekly Presentation Checks-TTR-Continued

Opeant	Post	Normal indication		Corrective procedure
Prepa	re for addition	onal checks.		
а	On the target and adjust th	track contro-power sup e GAIN control fully co	oply, set to	the AGC=MANUAL switch to MANUAL ckwise
ь	On the target	antenna control group,	set the I	FEST switch to TEST
		•		
	Set the TTR	range to 42,420 yards.		
			the proc	cedures in d through f below
d				
e.				
f				
g	On the eleva andicator	tion indicator, set the l	NOR-H _T	switch to H _T and observe the elevation
		The height graticule is il	luminate	sd .
				Refer to figure 51
		The H _T LED display in	dication i	is between —100 and 100
				Recheck the setting of the TTR rang and antenna elevation
			pincident	with the bottom etched mark on th
				On the elevation target video amputie adjust HT ZERO variable resistor R36
h.	Position the	antenna elevation to 80	0 mils.	
		The H _T LED display in	dication :	s between 89,900 and 90,100.
				Recheck the setting of the TTR rang and antenna elevation
		The lower sweep is congraticule.	neident v	with the upper etched mark on the heigh
				On the elevation target video amplifier adjust 90K SF variable resistor R3 If the graticule height cannot be of tained, adjust LIMIT variable resistor R34 fully clockwise. Readjust R31
1			` variable	resistor R34 until the upper sweep jus
1	Set the NOR	H _T switch to NOR an	d the AG	GC-MANUAL switch to AGC
k	Notify the c	omputer operator that the	he check	s have been completed
	Prepa a b Chec a b c d e e f g	Prepare for addition a On the target and adjust the On the target Check the elevation as Position the book Set the TTR of the target the e. On the keybridge of the target continues and cator. h. Position the h. Position the starts to low J. Set the NOR.	Prepare for additional checks. a On the target track contro-power supand adjust the GAIN control fully color on the target antenna control group. Check the elevation indicator +H _T sweep of a Position the TTR antenna elevation to be the TTR range to 42,420 yards. b Set the TTR range to 42,420 yards. c Have the computer operator perform of Energize the computer as presented. Con the keyboard display, enter 6 and Enter DFL and depress CR. The height graticule is if the height graticule is if the height graticule. The lower sweep is contend from the antenna elevation to 80. The H _T LED display in the H _T LED display in the H _T LED display in the first contend to t	Prepare for additional checks. a On the target track contro-power supply, set I and adjust the GAIN control fully countered b On the target antenna control group, set the I Check the elevation indicator +H _T sweep displacen a Position the TTR antenna elevation to 0 mis b Set the TTR range to 42,420 yards. c Have the computer operator perform the prod Energize the computer as presented in the product of the keyboard/display, enter 6 and depress feater DFL and depress CR on the elevation indicator, set the NOR—H ₁ addicator The height graticule is illuminated The H _T LED display indication. The lower sweep is coincident height graticule. h. Position the antenna elevation to 800 mils. The H _T LED display indication. The lower sweep is coincident and the H ₁ LED display indication. The lower sweep is coincident and the starts to lower. If R34 was adjusted, adjust LIMIT variable starts to lower.

(U) Table 3-3. Weekly Transmitter Checks-TTR

Step	Operation	Normal Indication	Corrective procedure
1.	_	transmitter checks. edures in table 2-5, st	eps 1 through 4
2	Check the voltage	es at the antenna.	
	a On the targ	tet track control pov	ver supply, set the TTR PULSE WIDTH switch to
			port base, set test switch \$10 to the positions indi- neter MI indications are within the lim to specified
	(1) (2) (3) (4) (5) (6) (7)	+350V -500V -250V +320V +2500V +5000V V1	3.20 to 3.70 4.70 to 5.20 2.40 to 2.60 3.10 to 3.30 2.30 to 2.70 4.85 to 5.35 2.50 to 4.50
			Refer to figure 59

(U) Table 3-3 Weekly Transmitter Checks -- TTR Continued

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		UNCLASSII	FIED
Step.	Operation	Narata) addicptoral	. अस्यान्द्रव्यक्षम् वृत्तव्यक्षम् । स्राम्बर्गान्द्रव्यक्षम्
2.	Continued		
	c Set the T	TR PULSE WIDTH sw tch to LONG	and test switch S10 to V1
		Test meter M1 indicates a va	alue between 1.50 and 3.20.
			Refer to figure 47
	d. On the ta	rget antenna control group, depress t	the MP switch
		The MP-ON indicator ligh	nt Illuminates.
			Refer to figure 65
		Test meter M1 indicates a vi	alue between 1.70 and 3.40.
			Refer to figure 47
	e Set the T	TR PULSE WIDTH switch to SHORT	Г
- 1		Test meter M1 indicates a vi	alue between 1 50 and 3.00.
			Refer to figure 47
	f Set test s	witch S10 to OFF and the TTR PULS	SE WIDTH switch to LONG
	g Set the A	NTENNA switch to DISABLE.	
	h. Set the B	LOWER switch to OFF	
3.	Deenergize	the TTR transmitter.	
	a. On the tar HV SUPI	rget track control-power supp.y, rotate PLYOFF switch.	e the HV SUPPLY knob to START and depress th
	b. Depress t	he MP switch.	
		The MP—OFF indicator lig	tht illuminates.
			Refer to figure 65
4.	Calibrate t	he power monitor	
	a. On the po switch to	wer monitor in the target track RF o	control-power supply group, set the ADJ MEA
		The power monitor test met	ter Indicates V (full scale).
			Adjust the V ADJ knob on the
			Refer to figure 47
	b. Set the A.	DJ—MEAS switch to ∞.	
		The power monitor test met	ter indicates ∞.
			Adjust the ∞ ADJ knob for
			meter indication as close to ∞ s possible.
			Refer to figure 47
	c. Set the A	DJ—MEAS switch to 0.	
		The power monitor test met	er indicates 0 (full scale).
			Adjust the 0 ADJ knob.
			Refer to figure 47
	2 62 4 42 44		

d. Set the ADJ MEAS switch to MEAS.

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(U) Table 3-3 Weekly Transmitter Checks-TTR Continued

		UNCLASSII	RED			
Step	Operation	Mornal indication	Cottective procedure			
б.	Energize t	he TTR transmitter.				
	Rotate the HV SUPPLY knob to START and depress the HV SUPPLY—ON switch Adjust the SUPPLY knob to obtain an indication in the center of the white block on the MAGNETRON me					
6.	Check the	reverse current diode.				
		t track receiver-transmitter	scale, monitor the current between TP1 and TP2			
		The meter indicates a value	greater than 0 but less than 70 milliampere Refer to figure 47			
	b. Disconne	ect the multimeter				
	Note The p hand Insure frequency set	that the indication on the MAGNETRON #	rformed at the low midpoint and bigb ends of the frequent beter in maintained in the center of the white block at ea			
7.	Check the	transmitted power in the long p	ulse mode.			
	a. On the t LONG.	arget track control-power supply, ver	nfy that the TTR PULSE WIDTH switch is set			
	b. Observe	the power monitor test meter				
	Note The n		64.5, with 54.5 dbm being a full-acate (9) indication.			
		The meter indication is not the right) is acceptable.	greater than 2 db. An indication beyond 0 (
			Set the SCALE—db switch bring the indication as near (full scale) as possible Repeat t procedures in steps 3a, 4, 5, and above.			
	c. Add the	indication on the power monitor test i	meter to the indication of the SCALE—db switch			
			ss than 2 db at midband and does not exce			
			Ferform the procedures in tall 5-13 and repeat step 7 Perfor the procedures in table 5-14.			
			Refer to figure 47			
	d Depress	the MP switch on the target track coi	ntrol ronsole.			
	a arthrood	The MP -ON indicator illu				
		I MC 1/21 Ot 1 Moonly 1 Mo	Refer to figure 65.			
	e Observe	the indication on the power monitor i				
		-	greater than 2 db. An indication beyond 0 (
			Set the SCALE—db switch bring the indication as near			

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(full scale) as possible.

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(U) Table 3-3 Weekly Transmitter Checks TTR—Continued UNCLASSIRED

Step	Operation	Notinal indication	Contect we procedure
7.	Continued		
	f Add the ir	dication on the power monitor test mete	r to the indication of the SCALE - db switch.
		The final db indication is less that the low end and high en	an 2 db at midband and does not exceed
			Perform the procedures in table 5-13, and repeat step 7
			Refer to figure 47
	g. Depress th	ne MP switch on the target track control	consule
		The MP—OFF indicator illumi	nates.
			Refer to figure 65
8.	Check the t	ransmitted power in the short pulse	mode.
	 a. On the tar 	get track control power supply, set the TI tion on the power monitor test meter	TR PULSE WIDTH switch to SHORT Observe
ĺ		The meter indication is between	0 and 3 db.
			Set the SCALE—db switch to bring the indication as near 0 (full scale) as possible. Repeat the procedures in steps 3a, 4, 5, and 8 above.
	b. Add the in-	dication on the power monitor test meter	r to the indication of the SCALE db switch
- 1		The final db indication is less exceed 11.5 db at the low end an	than 19.5 db at midband and does not d high end of the band.
			Perform the procedures in table 5-14
			Refer to figure 47
	c Depress the	e MP switch on the target track control c	
		The MP—ON indicator illumina	ites.
			Refer to figure 65.
	d. Observe the	e indication on the power monitor test ma	
		The meter indication is between	0 and 2 db.
			Set the SCALE—db switch to bring the indication as near 0 (full scale) as possible. Repeat the procedures in steps 3a, 4, 5, and 8 above
	e. Add the ind	ucation on the power monitor test meter	to the indication of the SCALE—db switch.

(U) Table 3-3 Weekly Transmitter Checks—TTR—Continued
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Step	Op	cascon	S remai anureasian	Corrective procedure
8.	Co	ntinued		
			The final db indication 4 db at the low end and	is less than 3 db at midband and does not exceed high end of the band.
				Perform the procedures in table 5-14
				Refer to figure 47
	f Set the SCALE—db switch f 1. Set the ADJ MEAS switch		CALE-db switch to 0	
			DJ MEAS switch to V	
ľ	g.	Set the B	LOWER switch to QN	
	h.	Set the A	NTENNA switch to NORMA	AL
	í.	Depress t	he MP switch	
			The MP-OFF indicator:	alluminates.
				Refer to figure 65
9. Deenergize the TTR transmitter.		TTR transmitter.		
		_		ind depress the HV SUPPLY-OFF switch

(U, Table 3 3.1 Weekly Target AFC Checks—TTR UNCLASSIFIED

Slep	Operation	Normal Inducation	Corrective procedure
	Perform the	procedures in table 2-6	

(U) Table 3-4. Weekly Rodar Test Set Group Checks UNCLASSIFIED

Step	Operation	Normal indication	Cottective procedure	
1.		the tracking station for the check the procedures in table 2-1	ī.	
2,	a. Ver	the radar test set for the check, rify that the AC POWER switch in the FUNCTION switch to CAL.	set to ON	

Omit this step if the checks in the preceding tables have been performed in sequence

(U) Table 3-4. Weekly Radar Test Set Group Checks-Continued

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Step	Operat in	Normal indication	Corrective poles dure
3.	Check the powe	et supply voltages.	
	ON to reset overve	e indicates of for any switch	position, set the AC POWER awards to OFF and then to
	Set the METEI +30	R switch to the following	Vdc positions in sequence +15, -15, +5, 48,
		The RF POWER dB me	ter indicates I 20.3 for each switch position,
			Refer to figure 92
4.	Check the autor		
	Depress the LA	MPS pushbutton switch	
		The LEVELING indicat	or illuminates (green).
			Perform the procedures in table 4-3, step 3
- 1			Refer to figures 92 and 93
5.	Condition the ra	dar test set for remote op	eration.
		ION switch to RMT and th	

(U) Table 3-4.1 Weekly Beacon AFC Checks—TTR UNCLASSIFIED

Step	Operation	Norma Indication	Corrective procedure	
	Perform the	procedures in table 2-7		

(U) Table 3-5 Weekly RSPU Checks-TTR and MTR UNCLASSIFIED

Step	Operation	Normal and eatton	Corrective procedure	_
I.	Perform RS	SPU checks for the MTR.		
		m the procedures in table 2-1		
	b. (Delet			

Omit this step if the checks in the preceding tables have been performed in sequence

Operation

Continued

Step

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(U) Table 3-5 Weekly RSPL Checks: TTR and MTR -Continued UNCLASSIFIED

с				
		Indication (V)		
	Position	From	To	
	-5V	4 75	5.25	Refer to table 5-9
	12V	10.80	13 20	Refer to table 6-2
	15V	13.50	16.50	Refer to table 6-2
	28V	22.0	34.0	Refer to table 2-1
	40V	36 00	44.00	Refer to table 6-2
	150V/3	45.00	55.00	Refer to table 2-1
	+26V	23 40	28.60	Refer to table 6-2
	+15V	13.50	16.50	Refer to table 6-2
	+12V	10.80	13,20	Refer to table 6-2
	+5V	4.75	5.25	Refer to table 5-9,
	c	Position -5V 12V 15V 28V 40V 150V/3 +26V +15V +12V	### And observe the VOLTS DC in the cation (V) ### Position	### Indication (V) Position From To -5V 4.75 5.25 12V 10.80 13.20 15V 13.50 16.50 28V 22.0 34.0 40V 36.00 44.00 150V/3 45.00 55.00 +26V 23.40 28.60 +15V 13.50 16.50 +12V 10.80 13.20

d Set the DC SELECT switch to OFF

Normal indication

Observe COORD DISPLAY.

Fault LED (decimal point at extreme left of display) is extinguished

Corrective procedure

- At the director station, verify that the computer DC POWER switch is set to ON
- (2) On the MTR RSPU front panel, set the MODE switch to MNL and then to OPR
- (3) Perform the procedures in table 6-4
- f Set the TEST VIDEO switch to OFF
- g Set the MODE switch to TEST
- h Set the MICROPROCESSOR SELECT switch to PCS
- Set the TEST ADDRESS thumbwheel switches to 6082, and observe the TEST MONITOR LED indicators.

All 24 LED indicators are extinguished (logic zeros).

Perform the procedures in table 6-4.

Set the TEST ADDRESS thumbwheel switches to 6083, and observe the TEST MONITOR LED indicators.

All 24 LED indicators are extinguished (logic zeros).

Perform the procedures in table 6-4

k Set the COORD SELECT switch to D-FCN

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(U) Table 3-8 Weekly RSPL Checke-TTK and MTR-Continued

		_		311 IL 0
Step	Оре	eral on	Normal and earlier	Conscibe procedure
1.	Co	ntinued		
	PXt	ric to ac Inguishea b	below if the indication has difficult for	is made immedia e y after the foult 4 RD, dec no. 100.1
	l. m		MODE switch to MNL and the COORD DISPLAY	hen to OPR.
		0.1100		2,767 minus BEACON DELAY + 2 yards,
				Perform the procedures in table 6.4
	n	Ver.fy t	hat the ELEVATION BORE thumbwheel switches are se	SSIGHT AZIMETH BORESIGHT and BRACO
	O	Depress		or each setting in a above and observe COOR
			The COORD DISPLAY	readout equals the thumbwhee, setting in ea
				Perform the procedures in table 6-4.
2.	Per	form RSP	U checks for the TTR	•
	a.	(Deleted	1)	
	Ь.	On the LONG	target track control power	supply, set the TTR PULSE WIDTH switch
	с	On the and obse	TTR RSPU front pane, set to	the DC SELECT switch to the positions indicate indicate indicate as specified below
			Indication	

	India (1	ation 7)	
Position	From	To	
-5V	4.75	5.25	Refer to table 5-9
-12V	10.80	13.20	Refer to table 6-2
-15V	13.50	16.50	Refer to table 6-2.
-28V	22.0	34.0	Refer to table 6-1
-40V	36.00	44.00	Refer to table 6-2
150V/8	45,00	55,00	Refer to table 2-1
+26V	23,40	28.60	Refer to table 6-2
+16V	13,50	16.50	Refer to table 6-2,
+12V	10,80	13.20	Refer to table 6-2
+5V	4,75	5 25	Refer to table 5-9

- đ Set the DC SELECT switch to OFF
- Observe COORD DISPLAY

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(U, Table 3-5 Weekly RSPU Checks TTR and MTR: Continued

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Sup	Op	e) a sior	Normal indication	untrective pr	ocedure
2.	Co	ntinued			
			Fault LED (decimal p	oint at extreme left o	f display) is extinguished
				(1) At the	e director station, verify that omputer DC POWER switch to ON
				the I	e TTR RSPU front panel, set MODE switch to MNL and to OPR
				(3) Perfar	m the procedures in table 6-4.
	1		EST VIDEO switch to OF	F	
	g		IODE switch to TEST		
	h		UCROPROCESSOR SELI		
	,	Set the MONITO	TEST ADDRESS thumb IR LED indicators.	wheel switches to 6	082, and observe the TEST
			All 24 LED indicators	are extinguished (logi	c zeros).
				Perform th	te procedures in table 6-4
	1	Set the 'MONITO	TEST ADDRESS thumb R LED indicators.	theel switches to 60	083, and observe the TEST
			All 24 LED indicators	are extinguished (logi	C Zeros).
	l				e procedures in table 6-4
	k,		OORD SELECT SWITCH	TO D-FCN	
	Poin	ofe In steps II) axtıngu _s sh	m and a below the observations, before the indication has d	n should be made immed lifted from its initial value	nately after the fault LED (dec maile.
	L		ODE switch to MNL and	hen to OPR.	
	m,	Observe C	COORD DISPLAY		
			The readout indicates :	3,218 minus LONG I	PULSE DELAY ±2 yards.
					e procedures in table 6-4.
	n	On the t	arget track control-power	supply, set the TTI	PULSE WIDTH switch to
*	0.4	PITO INT	HOOR SHITCH TO MUL		
			'The readout indicates 3	2,767 minus SHORT	PULSE DELAY +2 yards.
				Perform the	e procedures in table 6.4
	р	Verify the DELAY, values	t the ELEVATION BORE and LONG PULSE DEL.	SIGHT AZIMUTH R	ORESIGHT SHORT PULSE ches are set to prerecorded
	g	Depress ti	he ENTER pushbutton for each thumbwheel swit	or each setting in p :	above and observe COORD

- LAY for each thumbwheel switch setting

The COORD DISPLAY readout equals the thumbwheel setting in each

Perform the procedures in table 6-4.

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(U) Table 3-5.1 Weekly Punge System Checke -TTk

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Step	Operation	Norma, indication	Corrective pracedure	
	Perform the	procedures in table 2-8		

(U, Table 3-5.2 Weekly Monopulse Receiver Checks-TTR

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Stop	Operation	Normal indication	Convective proceedure	
	Perform	the procedures in table 2.9.		

ft., Table 3-6. Weekly Tracking Servo Checke-TTR

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			00.011	Z = 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Всер	Оре	oralion No.	ormal indication	Corrective procedure			
1,	Prepare for the tracking serve checks,						
	a.	Perform the pr	ocedures in table 2-	1.'			
	b.	On the target of	intenna control grou	ip, set the switches as indicated			
		Switch	Se	riting			
		TEST	3	rest			
		MULTI BIN		OFF .			
		RANGE TRAC		TR			
		AGO-LIN-LO	G A	AGC			
	C.	On the target e	rror voltage mondo	r, set the switches as indicated			
		Switch	Se	etting			
		(IF TEST)-AI	OJ A	ADJ			
		RCVR TEST	E	BIAS			
2	Check the high power serve amplifier (HPSA) balance from the radar control trailer						
	а	In the target ar	tenna contro, group	p, connect a test lead between J1 and J2			
		TI	te elevation position	i displays are not changing.			
				Perform the procedures in table 4-7			
ı	b	Remove the ter	t lead from J1 and	2, and connect it between J3 and J4			
				displays are not changing.			
				Perform the procedures in table 4-7,			

^{*} Omit this step if the checks in the preceding tables have been performed in sequence

(U) Table 3-6. Weekly Tracking Servo Checks-TTR-Continued

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	CONFIDENTIAL					
Step	Operation Normal induction	Corrective procedure				
2.	Continued					
	c. Remove the test lead from J3 and	J4				
3.	Check the dc balance of the servo error	converters.				
	On the target track control-power s and the TTR PLISE WIDTH sw counterclockwise	upply, set the AGC MANUAL switch to MANUAL intensity of SHORT Adjust the GAIN control fully				

b On the error voltage monitor, operate and hold the AZ SENS and EL SENS switches in the HI position

The AZ ANGLE ERROR and EL ANGLE ERROR meters indicate within 1/2 of a small division of zero.

On the target azimuth or elevation servo error converter, adjust the SP BAL control to obtain an indication of zero on the meter.

Refer to figure 53 (azimuth) or 54 (elevation).

- c. Release the AZ SENS and EL SENS switches.
- d. Set the TTR PULSE WIDTH switch to LONG

(U) Table 3-6 Weekly Tracking Serva Checks-TTR Continued CONFIDENTIAL

Step	Operation	Normal indicatule	Corrective procedure						
а.	Continued								
	e Operate a	e Operate and hold the AZ SENS and EL SENS switches in the HI position							
	•	The AZ ANGLE ERROR and EL ANG within 1/2 of a small division of zero.	GLE ERROR meters indicate						
			On the target azimuth or eleva- tion servo error converter, adjust the LP BAL control to obtain an indication of zero on the meter						
			Refer to figure 53 (azamuth) or 54 (elevation).						
	f. Release t	he AZ SENS and EL SENS switches.							
4.	Check the	balance of the azimuth angle error modulator	r in the long pulse mode.						
	a. Set the T	TR range to approximately 20,000 yards							
		TR RSPU COORD SELECT switch to A-FCN							
	c. On the ta	rget antenna contro. group, set the azimuth MAN-	AID—AUTO switch to AUTO.						
		The azimuth COORD DISPLAY indication LED's should be ignored.							
			On the target azimuth angle error modulator, slowly adjust the MOD BAL control.						
			Refer to figure 53.						
	d. Set the a	zimuth MAN AID AUTO switch to MAN							
5.	Check the	balance of the elevation angle error modulate	or in the long pulse mode.						
	a. Position	a. Position the TTR antenna elevation to approximately 800 miles							
		TR RSPU COORD SELECT switch to E-FCN							
		irget antenna control group, set the elevation MAN	AID AUTO switch to AUTO.						
		The elevation COORD DISPLAY indicinal LED's should be ignored.							
			On the target elevation angle error modulator, slowly adjust the MOD BAL control						
			Refer to figure 54						
	d. Set the e	levation MAN—AID—AUTO switch to MAN							
	e. Set the T	TR RSPU COORD SELECT switch to D-FCN.							
	f Set the A	GC-MANUAL switch to AGC							

U. Table 3-6. Weekly Tracking Servo Checks-TTR-Continued

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Step	Operation	Nurmal indication	s, ddfellium jyrsterjidhe
	Cile - In Alex	WID lane sules sutametic	

Check the TTR long pulse automatic range tracking,

a. On the TTR IF test generator, set the switches as indicated:

Switch Setting. OSC ON MODE CW SLEW Center (off) SLEW RATE. 50 0-90 dB ATTENUATOR 30 0-9 dB ATTENUATOR 0 PULSE WIDTH LONG

- b On the target track control-power supply set the IND switch to R.
- c. On the IF test generator adjust the FINE and COARSE IF FREQ ADJ controls for a maximum indication on the target error voltage monitor RCVR TEST meter.
- d. On the TTR IF test generator, set the MODE switch to PULSE and momentarily depress the RANGE PRE-SET switch.
- e Set the TTR range to approximately 18,000 yards.
- f. On the target antenna contro, group, set the MULTI BIN switch to ON and the range MAN-ACQUIRE AID TRACK AID-AUTO switch to ACQUIRE AID.

The IF test pulse is centered in the range notch.

Set the range switch to MAN. Change the TTR range to place the pulse in the range notch. Set the range switch to ACQUIRE

> Refer to figures 52, 54 4, and 65.

- g On the TTR IF test generator, set the SLEW switch to OUT and the SLEW RATE switch to 500.
- h. When the IF test pulse is acquired, set the SLEW RATE switch to 2500

Note To help acquire the IF test pulse, it may be necessary to rotate the range handwheel to establish an aided rate.

. When the IF test pulse is acquired, set the range MAN ACQUIRE AID -TRACK AID -AUTO switch to AUTO.

The IF test pulse remains within the range notch.

Refer to figure 52.

J. When the IF test pulse range equals approximately 100,000 yards, set the IF test generator SLEW RATE switch to OFF and set the range MAN ACQUIRE AID-TRACK AID-AUTO switch to MAN and then to ACQUIRE AID.

The IF test pulse is within the range notch.

Adjust the range handwheel to reacquire the IF test pulse.

(U. Table 3-6. Weekly Tracking Serva Cheeks—TTR—Continued CONFIDENTIAL

tep	Operation Nurma nation with		Const se praedute					
β.	Continued							
	k Set the SLEW RATE switch to 50 and the SLEW switch to IN							
	/ Set the SLEW RATE switch to 500							
	m When the IF test pulse is acquired, set the SLEW RATE switch to 2500							
	Note. To help acquire the IF test pulse, it may be necessary to rotate the range handwhee, to assabish an aided rate							
	n When the IF test pulse is acq switch to AUTO.	n. When the IF test pulse is acquired, set the range MAN. ACQUIRE AID. TRACK AID. AUTO.						
	The IF test pulse remains within the range notch							
			Refer to figure 52					
	a Continue the check until the	o Continue the check until the IF test pulse range is approximately 20,000 yards						
	p. Set the range MAN ACQU							
7	·	q Set the SLEW switch to the center off) position and the SLEW RATE switch to OFF Check the TTR short pulse automatic range tracking.						
		•	SE WIDTH switch to SHORT					
	 a On the target track control power supply, set the TTR PULSE WIDTH switch to SHORT b. On the IF test generator, set the PULSE WIDTH switch to SHORT and momentarily depress the RANGE PRE-SET switch. 							
	c. Set the TTR range to approximately 18,000 yards.							
	d. Set the range MAN ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID							
	The IF test pulse is centered in the range notch.							
			Set the range switch to MAN. Change the TTR range to place the pulse in the range notch Set the range switch to ACQUIRE AID					
			Refer to figures 52, 54 4 and 65					
	e. Repeat step 6g through q above							
	f On the IF test generator, set Switch							
	OSC SLEW RATE SLEW 0 90 dB ATTENUATOR PULSE WIDTH	OFF OFF Center (off) 90 LONG						
	g. (Deleted)							
	h. (Deleted)							

(U, Table 3.7. Weekly Borenght Checks-TTR and MTR

Stoja	Operation	Normal ind cation	Corrective procedure
	Aprile This p	procedure is the same for the TT	PR and MTR using the controls and indicators peculiar to
		m the procedures in tables 3.6 (iras in this table	(TTR) and \$14, steps 1 through 6 (MTR) before perform-
1.	Acquire and	lock on the radar test signal	with the antenna in the plunged coordinates.
*	a Perform and 2 (test set b On the AID—A	h the procedures in table 2.7 MTR) In table 2.7 or 2.15 Insure that the radar test so target antenna control grow	7, steps 1 through 3 (TTR) or table 2-15, steps 1 is step 2b, use the planged coordinates of the radar et pulso range is sess than 20,000 yards applied the range MAN ACQUIRE AID—TRACK of the elevation and azimuth MAN—AID—AUTO
		A stable pulse is center	red in the range notch.
			Repeat step 1,
			Refer to figure 34 (MTR) or 65 (TTR).
2.	Check the al	inement of the TTR radar b	eam,
	a. Record	the azimuth indication. De	signate this indication as A ₁
	b Record	the elevation indication. De	esignate this indication as E ₁
		e azunuth and elevation M IRE AID—TRACK AID—AU	AN-AID-AUTO switches and the range MAN ITO switch to MAN.
	set the	n the antenna coordinates to azimuth and elevation M REAID—TRACK AID—AU	o the normal coordinates of the radar test set and AN AID-AUTO switches and the range MAN-ITO switch to AUTO.
		A stable pulse is center	red in the range notch.
			Repeat step 1 above for the normal radar test set coordinates
	e Record	the azimuth indication De	esignate this indication as A ₂
		is greater than 3,200 mils, i 200 mils.	subtract 3,200 mils. If A ₁ is less than 3,200 mils
	g Subtrac	ct A ₂ from the resultant figu	are computed in f above
		The difference does no	
			(1) Calculate A' using the following formula
			Note. If A, is greater than 3,200 mils, sub
			tract 3,200 mis. If A ₁ is less than 3,20 mils, add 3,200 mils.
			A = (A ₁ ± 3,200) + A ₂

(U) Table 2-7. Weekly Baresight Checks-TTR and MTR-Continued

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Blep	Operation	Normal Indication	Corrective protecture
2.	Continued		
			(2) Loosen the securing bolts on each side of the track receiver-transmit ter, and adjust the azimuth ad- justing screw until the azimuth andication equals A
			(3) Tighten the securing bolts.
			(4) Set the azimuth and elevation MAN—AID—AUTO switches and the range MAN—ACQUIRE AID— TRACK AID—AUTO switch to MAN.
*			(5) Repeat steps 1 through 2g above
<i>^</i>	h Record	the elevation indication	Designate this indication as Eq. 10000000 2 3 000000
		E, from 3,200 mile.	The state of the s
		E2 from the resultant fi	nite computed in rahava
		The difference does	
			(1) Calculate E using the following formula
			$(3,200 - E_1) + E_2$
			E'= 2
			(2) Change the setting of the ELEVA- TION BORESIGHT switches and momentarily depress the ENTER switch until the calculated E value is indicated. Record the setting of the ELEVATION BORESIGHT switches.
			(8) Set the azimuth and elevation MAN-AID-AUTO switches and the range MAN-ACQUIRE AID- TRACK AID-AUTO switch to MAN
*			(4) Repeat steps 1, 26 through d, and 24 through t and 24 through t and and a d, and and a d, and a d d, and a
	k Set the ACQUIR	azimuth and elevation ! E AID—TRACK AID—A	MAN-AID-AUTO switches and the range MAN-
3.	(Deleted)		

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(U) Table 3-7 Weekly Boreright Checks-TTR and MTR-Continued

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Step	Opetation	Normal nutration	Corrective proceduze
4.	A On th	the TTR switch positions. ³ s target test contro., set the Sl	GNAL LEVEL switch to 70. Set the BEACON-TARGET switch to TARGET
5.	Reestablish On the ma	the MTR switch positions.	et the TARGET -STANDBY MISSILE switch to

Umit this step if the checks in the raccording ables are to be performed in sequence

(U) Table 3-8. Weakly Telescope Collimation Checks-TTR and MTR

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top	Opera	Mon	Normal Inducation	Corrective procedure
	No each	te Thu po	ocedure is the same for the TT	R and MTR us og the controls and indicators peculiar to
1.			veekly boresight checks. Procedures in table 3-7.	
2.	Perf	orm the t	elescope collimation in elev-	ation.
*	a.	On the a	ntenna support base, set the	e ANTENNA switch to DISABLE 4
	a.I.	Install th	ne sighting telescope in the r	normal position
ặc .	ъ.	Set the	ANTENNA switch to NORM	fal.1
	b 1	LONG,		supply, set the TTR PULSE WEDTH switch to
	С	target or	a the rader test set mast.	there the horizontal reticle crosses the elevation
	ď	Plunge t	he antenna in elevation and	rotate it 3,200 müs in azımuth
	e	Lock on	the radar test set signal in t	he plunged elevation quadrant.
	1.	Repeat		
	g.	Record	teally add the indications of the result. (This is the po se if the electrical mechanic	stained in c and f above and divids the result by 2 int where the nonzontal reticle in the telescopal-optical axes are parallel.)
	h.			with the value calculated in g above.

Omit this step if the checks in the preceding tables have been performed in sequence

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L., Table 3.8. Weekly Telescope Callimation Checker TTR and MTR. Continued

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Step	Operal	(on Normal indication	a Corrective procedure
2.	Cont	nued	
		The two pois	nta are not separated by more than 1 division
e			Set the ANTENNA switch to DIGABLE. Adjust the elevation adjusting acrews on the telescope mount until the sighting telescope reticle moves to the value calculated in g above. Set the ANTENNA switch to NORMAL and repeat the procedures in c through h above.
3	Perfo {opti	rm the telescope collims cal perpendicularity).	ation in azimuth using the target flags on the radar test set
	4	Note and record the ind	lication where the vertical reticle crosses the azimuth target
	ь	Plunge the antenna in elec	vation and rotate it 3,200 mils in azimuth
	c	Lock on the radar test set	in the normal quadrant
	d,	Repeat a above.	
	е	Record this result (This	ications obtained in a and d above and divide the result by 2 is the point where the vertical reticle in the telescope should nical-optical axes are parallel.)
	1	Compare the indication is	a above with the value calculated in e above
- [The two pou	nts are not separated by more than 1 division.
*			Set the ANTENNA switch to DISABLE While still in the normal quadrant, ad just the azimuth adjusting screw on the telescope mount until the sighting telescope reticle moves to the value calculated in e above. Set the ANTEN NA switch to NORMAL and repeat the procedures in a through / above.
	8		vation MAN-AID-AUTO switches to MAN Set the range FRACK AID-AUTO switch to MAN
4.	Retu	rn to normal operation.	
	a.		indicator group, set the TARGET STANDBY-MISSILE the SIGNAL LEVEL switch to 70
	b	On the target test control	, set the SIGNAL LEVEL switch to 70
	c	On the target error voltag	ge monitor, set the BEACON-TARGET switch to TARGET
	d,	Set the ANTENNA switch	h to DISABLE.
	e.	Return the telescope to s	torage.
	1.	Set the ANTENNA switch	h to NORMAL.

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(U) Table 3-8.1 Weekly Lin-Log Receiver Chechs-TTR

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Scep	fipe atom	Norma, indicati in	Corrector's procedure
	Perform the	procedures in table 2-11	

(U) Table 3-8.2 Weekly Presentation Checks: MTR

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Step	Operations	Normal indication	C rective procedure	
	Perform the	procedures in table 2-12		

(U) Table 3-9 Weekly Transmitter Checks MTR

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Step	Operation	Normai indica	1 10.5	Corn-cluse procedure
1.	Perform the	daily transmitte	r checks.	
	Perform the	procedures in ta	ble 2-13, steps 1 thro	ough 4.
2.	Check the vo	sitages at the ani	tenna.	
	a. At the indicate	missie azimuth ed below, and ol	drive equipment end bserve that the meter	fosure, set the test switch to the positions indications are within the amits specified
	(1) (2) (3) (4) (5) (6) (7) (8)	+350V -500V -250V +320V +2500V +5000V V1 OFF	3.25 to 3 75 4.75 to 5.25 2.40 to 2.60 3.00 to 3.30 2.40 to 2.60 4 75 to 5 25 0.80 to 2.00	
				Refer to figure 28.
	b. (Deleter	d)		-
3.	Deenergize ti	ne MTR transmi	tter.	
	On the miss: depress the H	le track contro IV SUPPLY—OF	power supply, rotal	te the HV SUPPLY knob to START and
4	Calibrate the	power monitor		

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a.1

ADJ-MEAS switch to V

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Set the ANTENNA switch to DISABLE and the BLOWER switch to OFF

On the power monitor in the missile track RF control power supply group, set the

(U) Table 3-9 Weekly Transmitter Checks-MTR-Continued

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Step	Oper	_t tion	Normal indication	Corrective procedure
4.	Сол	timed	_	
			The power monitor test	meter indicates V (full scale)
				Adjust the V ADJ knob on the power monster
				Refer to figure 16.
	b.	Set the A	ADJ—MEAS switch to ∞	
			The power monitor test	meter indicates ∞.
				Adjust the ∞ ADJ knob for a meter indication as close to ∞ as possible Refer to figure 16.
	c	Set the A	DJ-MEAS switch to 0	
			The power monitor test	meter indicates 0 (full scale).
				Adjust the 0 ADJ knob
				Refer to figure 16
	d.	Set the A	DJ MEAS switch to MEAS	3.
5.	Ener	rgize the N	(TR through operate in the	beacon mode.
	a	Rotate ti	he HV SUPPLY knob to ST	FART and depress the HV SUPPLY ON switch
	ь	On the n	nissile error voltage monitor,	set the BEACON TARGET switch to BEACON
	¢	Adjust the	ne HV SUPPLY knob to obt	ain an indication of 10 ma on the MAGNETRON
	No	te Omit d	below if the OFF FREQ indicate	or is not illuminated
	d	the magn		EW and operate the FREQUENCY switch to set the tuned cavity in use (as indicated on the SLEW
	€.	Set the T	UNE-SLEW switch to TUP	E .
	f		the FREQUENCY switch until (dip) in the white segm	intil the pointer on the FREQUENCY meter in-
			The OFF FREQ indicat	or light extinguishes.
				Perform the procedures in table 5-16
6.	Chec	k the reve	erse current diode	

With a multimeter set on the 100 milliampere scale, monitor the current between TP1 and TP2 in the missile track receiver-transmitter

The meter indicates a value greater than 0 but less than 40 milliamperes.

Refer to figure 16

Disconnect the multimeter

(U, Table 3.9 Weekly Transmitter Checks-MTR-Continued

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Step	Operation 8	ormal and callion	Current ter procedure		
7	Check the transmitted power in the beacon mode				
	a. Observe the in	dication on the power m	onitor test meter		
	A e The power m scale	smor test meter and cation	is in terms of db down from 51.5 with 51.5 d im as all		
	T	te indication on the met	er is between 0 and 2 db.		
			Adjust the SCALE—dh switch to bring the indication as near 0 (full scale) as possible Repeat the procedures in steps 3, 4, 5, and 7 above		
	 b Add the indica db switch Re- 	tion on the power monit ord this as the final db v	or test meter to the indication of the SCALE- value		
	Ti ec	ne fina. db value is less to rresponding to the cavit	han the value indicated below for the frequency y in use.		
	Ci	vity no			
		1 8,5 db 2 3.0 dh 3 2,5 db 4 3,0 db 5 3.5 db			
			Perform the procedures in tables 5-13 and 5-14		
			Refer to figure 16		
	c. Set the ADJ A	EAS switch to V			
8.	Check the 2-volt par	ver supply.			
	 a. Depress the Pt cator 	SH TO READ 2 VOL	TS switch on the missie transfer control-ind.		
	Th 2 :	e MAGNETRON CURF on the top scale.	RENT meter indicates a value between 1.7 and		
- 1			Refer to figure 16		
	b Set the BLOWE	R switch to ON and the	ANTENNA switch to NORMAL.		
9.	Deenergize the MTR				
	Rotate the HV SLPE	LY knob to START and	depress the HV SUPPLY OFF switch		

(U, Table 3 9.1 Weekly Torget AFC Checks—MTR
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Step	Operation	Normal industrian	Corrective procedure	
	Perform the	procedures in table 2-14		

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(U) Table 3-9.2 Weekly Rescon AFC Checks-MTR

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Ston	Operation	Normal indication	Corrective procedure	_
	Perform the	procedures in table 2-15		

tU. Table 3-9 3. Weekly Range System Checks-MTR

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Step	Operation	Normal indication	Corrective procedure	
	Perform the	procedures in table 2-16		

(U) Table 3-9.4. Weekly Monopulse Receiver Checks MTR

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Step	Operation	Normal indication	Conseitve procedure
	Perform the	procedures in table 2-17.	

(U) Table 3-9.5 Weekly ATC Checks-MTR

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Step	Operation	Normal pudication	Corrective procedure	
	Perform the	procedures in table 2-18		

(U) Table 3-10. (Deleted)

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11. Table 3-11 Weekly Tracking Servo Checks- MTR

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Step	Operation	Nopoud sublestson.	Corrective procedure
L.	Prepare for the	tracking servo checks.	
	a. Perform the pr	rocedures in table 2-1,1	
	b. On the missile	track control drawer, set the switch	es as indicated
	Switch	Setting	
	TEST	TEST	
	DISABLE	down	
		error voltage monitor set the switch	nes as indicated
	Switch	Setting	
	(IF TEST)—A RCVR TEST	DJ AĐJ BIAS	
2.	Check the high	power servo amplifier (HPSA)	balance from the radar control trailer.
	a. In the missue	truck control drawer, connect a test l	ead between jacks J1 and J2.
		The elevation position displays	
			Perform the procedures in tab 4-7
	b Remove the te	at lead from J1 and J2 and connect i	t between J3 and J4
		The azimuth position displays	are not changing.
			Perform the procedures in tab. 4-7
	c. Remove the te	st lead from J3 and J4	
3.	Check the dc b	alance of the serve error conve	ters
		track control-power supply, set the i trol fully counterclockwise	AGC - MANUAL switch to MANUAL. Adju-
	b On the missue HI position	error voltage monitor operate and h	o d the AZ SENS and EL SENS switches in th
		The AZ ANGLE ERROR and within 1/2 of a small division of	EL ANGLE ERROR meters indicative.
			On the missile azimuth or elev
			tion servo error converter, adju the SP BAL control to obtain a
			indication of zero on the meter
	c. Release the At	Z SENS and EL SENS awatches	
4.		ince of the azimuth angle error i	nodulator.
		ange to approximately 20,000 yards	
	O 4 SHT THE M	TOTUE TOTUES COOD NOTES AND	A TO B-FCW.

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(U) Table 3-11, Weekly Tracking Servo Checks-MTR-Continued

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Step	Operation	Normal adjustion	Corrective procedure
4.	Continued		
*	b On the AUTO.	216_08203	rawer, set the azimuth MAN-AID AUTO switch to "table" alicen is steady. The two right-hand LED's should be
		Ť	On the missile azimuth angle error modulator, slowly adjust the MOD BAL control
			Refer to figure 18,
	c. Set the s	zimuth MAN-AID-A	UTO switch to MAN.
5.		ance of the elevation a	ngle error modulator
*	b. On the	the MTR antonna eleva	ition to approximately 800 mils. Framer, set the elevation MAN-AID-AUTO switch to
*	AUTO.	The elevation indi- ignored	Play cation is steady. The two right-hand LED's should be
			On the missile elevation angle error modulator, slowly adjust the MOD BAL control.
			Refer to figure 19.
水	c Set the	elevation MAN AID—A	AUTO switch to MAN TEN TO AGC.
6,	Check the M'	CR automatic range tra-	cking.
	a. On the l	MTR IF test generator,	set the switches as indicated
		Switch	Setting
	0—9 dB	ATE BATTENUATOR ATTENUATOR WIDTH	ON CW Center (off) 60 30 0 SHORT
	b On the	IF test generator, adjust m indication on the mi	st the FINE and COARSE IF FREQ ADJ controls for a ssile error voltage monstor RCVR TEST meter
		MTR IF test generate the RANGE PRE-SET	r, set the MODE switch to PULSE and momentarily switch
	d. Set the	MTR range to approxin	nately 18,000 yards

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(4) Table 3-11 Weekly Tracking Serve Checks—MTR—Continued CONFIDENTIAL.

₹ .	Operation	Pormai andiosalun		Corrective procedure		
	Continued					
			er set the DISABLE sy	witch to DISABLE and the range MAN-		
			e is centered in the i	range notch.		
				Set the DISABLE switch to the down position. Change the MT range to place the pulse in the range notch. Set the DISABLE switch to DISABLE.		
				Refer to figures 20, 21. and 34		
	f On the MTR II	test generator, set	the SLEW switch to 0	OUT and the SLEW RATE switch to 50		
	g When the IF t	est puise is acqui	red, set the SLEW RA	ATE switch to 2500		
	Note: To help sequ	re the IF test pulse, it	may be necessary to rotate	the range handwhees to set an a ded rate		
	h When the IF to	est pulse is acquire	d, set the range MAN	AID-AUTO switch to AUTO.		
		The IF test puls	e remains within th	e range notch.		
				Refer to figure 20		
				100,000 yards, set the IF test generab AID—AUTO switch to MAN and then		
	The IF test pulse is within the range notch.					
				Adjust the range handwheel reacquire the IF test pulse		
	J. Set the SLEW RATE switch to 50 and the SLEW switch to IN					
	k Set the SLEW RATE switch to 500.					
	! When the IF	est pulse is acquir	red, set the SLEW RA	ATE switch to 2500		
	Note To help acqu	are the IF test pulse, it	may be necessary to rotate	e the range handwheel to establish an olded ra		
	m When the IF to	est pulse is acquire	d, set the range MAN	AID— AUTO switch to AUTO.		
		The IF test pulse	e remains within th	e range notch.		
				Refer to figure 20.		
	n. Continue the c	heck until the IF to	est pulse range is appr	oximately 20,000 yards.		
	o. Set the MAN-	AID-AUTO swit	teh to MAN			
ŀ	p. On the IF test	pulse generator, se	t the switches as indica	ated.		
[Switch		Setting			
	OSC SLEW RATE SLEW	ENUATOR	OFF OFF Center (off)			

U Table 3 . 2 Weekly Rouar Coder Checks-MTP

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Step	Opera	tloo	Normal indication	Corrective procedure	
٤ 1	Perfo	orm the da	ally radar coder check p	rocedures in table 2-20, steps 1, 2, 3, 4/, 5, and	4-6
2.	Prep	are the co	mputer for the radar cod	er checks.	
	a	Have the	computer operator perfo	rm the procedures in a 1 through a below	
	a.I	Energize 12-1.	the computer as prescri	ned in the daily power checks in TM 9-1430-1	251
	ь.	On the ke	yboard/display, enter 7	and depress CR.	
	c,	Enter CO	D and depress CR.		
	d.	Enter PY	1 and depress CR		
3.	Chec	k the con	trol of the coder comma	nd status indicators using the computer	
	ø,	(Deleted)			
	ь			COMMAND ORIGIN switch to NORMAL VERST ENABLE switches are set to NORMAL	erufy
		te Inform edures in a b		any abnormal indications that occur while performing	g the
	c	control p operator	anel for computer COD	ecators which should be lluminated on the c ER TEST checks 1 through 10. Have the comp inputer through the 10 test steps by simultaneous	uter
		TEST	PITCH	YAW BURST BU	RST

TEST		PITCH				YAW	BURST	BURST
no.	MAX	ZERO	+MAX	-MAX	ZERO	+MAX	ENABLE	ORDER
1		T				т		
2		T			Т	_		
8		T		T				
4			T		T			
5		T			T			
6	Ţ				T			
7			T			T		
8		T			Ť			
8 _r		T					T	
10			T			T		T

d On the missile track control drawer, set the TEST switch to the down position

The YAW column indicators are extinguished,

Refer to figure 36.

The PITCH column TYPE and ZERO indicators are illuminated ${\bf Refer} \ to \ figure \ 36$

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¹Note special instructions on the computer keyboard/display to obtain test no. 9

(U) Fable 3 12 Weekly Radar Coder Checks-MTR-Continued

LINCL ASSISTED.

Step	Opezation	Normal indication	CLASSIFIED			
Preh		Moture tudicedes	Corrective procedure			
3.	Continued					
		The BURST EN	ABLE and BURST ORDER indicators are illuminated			
	Glassian in	and an angle of	Refer to figure 36			
4.		coder order error operati				
	a On th		ect a test lead between TP1 and TP7 (end test points)			
		The LED on boar				
			Refer to figure 36			
		The ORDER ER	ROR indicator on the coder control panel illuminates			
- 1			Refer to figure 36.			
_		ve the test lead between	TP1 and TP7,			
5.		the computer status.				
		Not, fy the computer operator that the checks have been completed				
6.		the MTR transmitter,				
_			FART and depress the HV SUPPLY-OFF switch			
7.		the switch positions,				
	a On the		t the switches as indicated			
ĺ		Switch	Setting			
		NOCK	NORMAL			
	PITCH	MAND ORIGIN	NORMAL			
	YAW	1	ZERO ZERO			
		T ORDER	NORMAL			
	BURS	T ENABLE	NORMAL			
	BATT	ERY CODE	(Assigned code)			
	o On th	e missue track control p	ower supply, set the AGC-MANUAL switch to AGC			
			onitor, set the PRESET switch to 1.			
			awer, set the TEST switch to TEST			

(U) Table 3-13. Weekly Acquire and Command Checks-MTR

Step	Operation	Normal indication	Corrective procedure
	tion of the bi	acquire and command checks with the control and aunching cities are performed	is be performed in bute status and will require the coordinations are as Communications should be established before

(U) Table 3-13 Weekly Acquire and Command Checks-MTR Command

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			DACEAS	SILIED
Step	Оре.	rstion	Normal adication	Corrective procedure
1			daily acquire and command c procedures in table 2-21, step	
2.	Rec	ord the R	RECEIVED SIGNAL meter in	dications.
	đ		ny receiver noise present in t PEIVED SIGNAL meter	the range notch, record the average indication on
	ь	On the r	missile track control drawer,	set the TEST switch to the down position
			The flight simulator is re	eacquired.
				Repeat step 1 above
	C	For use meter	m table 3 13 1 note and re	cord the indication on the RECEIVED SIGNAL
	d	missile (nissue control indicator grou track siew control amplifier in the RECEIVED SIGNAL in	p, depress and hold the PRE ATT switch on the For use in table 3-13-1, note and record the indi- neter
			The indication on the F numbers less than that o	RECEIVED SIGNAL meter is approximately two observed in c above.
				Refer to figure 17
	e	Release	the PRE ATT switch	
3	(De	leted)		
4.	Pre	pare for th	ne missile acquire and comma	nd checks.
		lify the la		he MTR is ready for the acquire and command
.	Age	ussea Alba d	locomotos missila	

Acquire the designated missile.

LOCAL SECTIONATE AND THE

a. After notification from the aunching area section under test, set the MISSILE READY switch on the missue track indicator to the up position and depress the SECTION A, B, C, or D and LAUNCHER 1, 2. 3, or 4 pushbuttons corresponding to the selected missule

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IL, Table 3 13 Weekly Acquire and Command Checks-MTR-Cont nued

Htsp	Operation	Normal indication	Corrective procedure			
5,	Continued					
	b On the missile track control drawer, set the TEST and DISABLE switches down position					
		The missile track ante- missile,	nna slews to the coordinates of the designated			
			Perform the launcher position adjust ments in accordance with TM 9-1430 1251 10			
		The green TRACK indi	cator light on the missile control-indicator groupends.			
			Complete the requirements in b above If the problem is not resolved, perfore the procedures in table 3-13.1.			
		The signal from the mis	sile appears in the range notch.			
			 Acquire another missile, If the problem is solved, reject the fir missile and notify launching are maintenance personnel 			
			(2) Perform the procedures in tab 2-15.			
		The AZMUTH ERRO: track indicator indicate	R and ELEVATION ERROR meters on the missi 0.			
			Refer to figure 18 (azumuth) (
		The COAST indicator guishes.	light on the missile track control drawer exti			
			Refer to figure 34			
		For missiles with serial NAL meter indication	number 11935 and below, the RECEIVED SIG as at least 6.0.			
		For missiles with seria NAL meter indication	l number 13001 and above, the RECEIVED SI is at least 6 5.			
			Perform the procedures in table 2-1 If a problem still exists, reject the m sile and notify launching area main nance personnel.			

(U) Toble 3-13 Weekly Acquire and Command Checks-MTR-Continued

		UNCLAS	SSIFIED
5tep	Operation	Normal nuicetion	Corrective procedure
5.	Continued		AL meter indication minus the indication recorder thin 0.5 of the previous check of the same missile
			(1) Perform the procedures in table 2-17
			(2) If the indication is still abnormal not fy launching area maintenance personnel
		Only one pulse is visibl	e in the range notch.
			If severe video flaming is observed, no tify the launching area maintenance personnel to install an RF radiation absorber on one transmitting antenna on the missile. If two returns from a missile are visible, perform the pro- cedures in (1) through (8) below
			 On the missile track control drawer set the TEST switch to TEST
			(2) On the coder control panel, set the COMMAND ORIGIN switch to SIMULATED, the PITCH switch to ZERO, and the YAW switch to ZERO
			(3) Set the BURST ENABLE switch to NORMAL and the BURST ORDER switch to NORMAL
			(4) Set the SELECT switch to PITCH. One of the pulses will disappear.
			(5) Rotate the range handwheel to center the remanning pulse in the range notch Record the range indication
			(6) Set the SELECT switch to YAW.
			(7) Repeat (5) above
			(8) Subtract the indication obtained in (5) above from the indication obtained in (7) above If the dif- ference is less than 15 yards, the missile is acceptable If the dif- ference is greater than 15 yards.

- 2-17 If the indication is still abnormal.
- notify launching area maintenance personnel

- On the missile track control drawer, set the TEST switch to TEST
- On the coder control panel, set the COMMAND ORIGIN switch to SIMULATED, the PITCH switch to ZERO, and the YAW switch to ZERO
- Set the BURST ENABLE switch to NORMAL and the BURST ORDER switch to NORMAL
- Set the SELECT switch to PITCH. One of the pulses will disappear.
- Rotate the range handwheel to center the remaining pulse in the range notch Record the range and cataon.
- Set the SELECT switch to YAW.
- Repeat (5) above
- Subtract the indication obtained in (6) above from the indication obtained in (7) above. If the difference is less than 15 yards, the missile is acceptable If the difference is greater than 15 yards, reject the musile and notify the launching area maintenance personnel

Step

Operation

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L., Table 3-13 Weekly Acquire and Command Checks-MTR Continued

UNCLASSIFIED

Normal Indication

Coprective procedure

5.	Co	ntanued							
	٤	On the missile error voltage monitor, operate and hold the AFC SENS switch to the HI position							
1		The RCVR TEST meter indicates between 45 and 55.							
		Perform the procedures in table 2-15.							
	d.	Release the AFC SENS switch							
	€	Note and record the indication on the RECEIVED SIGNAL meter for the specific missile under test. This indication is used in table 3.13.1, step 2a.							
	f	In the missile control indicator group, momentarily depress the PRE ATT switch on the missile track saw control amplifier. Note and record the indication on the RE- CEIVED SIGNAL meter for the specific missile under test. This indication is used in table 3-13.1, step 36.							
6.	Per	form the missile command checks,							
- 1	A	ote. All controls in this step are on the control panel in the MTR coder unless otherwise specified							
	a.	On the missile track control drawer, set the TEST switch to TEST							
		The green TRACK indicator light extinguishes.							
1		Refer to figure 45 in TM 9-1430- 1254-20/2							
	b	Set the COMMAND ORIGIN switch to SIMULATED and the SELECT switch to BOTH							
	с	Set the PITCH switch to ZERO and the YAW switch to +MAX and then to -MAX							
		The fins on the misale respond to the switch position orders.							
		(1) Perform the procedures in table 2.20 Repeat a, b, and c above.							
		(2) If the indication is still abnormal, notify the launching area maintenance personnel.							
	d	Set the YAW switch to ZERO and the PITCH switch to +MAX and then to -MAX.							
		The fins on the missile respond to the switch position orders.							
		(1) Perform the procedures in table 2-20. Repeat a through d above							
		(2) If the indication is still abnormal, notify the launching area main- tenance personnel.							
	e	Set the PFTCH switch to ZERO							

C3

IL, Table 3-13. Weekly Acquire and Command Checks-MTR -Continued

UNCLASSIFIED

teg	1 p	eza 400	Nortiga, піфевіфов		orrecave procedure	
6.	Continued					
	f	At the : ORDER	request of automin switches to TEST	ig area personne, se	et the BURST ENABLE and BURST	
			The indication stant.	on the MAGNETR	ON meter increases or remains con-	
			The missile sign	nal disappears from t	he range indicator.	
				(1) Perform the procedures in table 2.20. Repeat a through f above.	
				(2) If the missile signal does not dis- appear, notify the launching area maintenance personnel	
1	g	At the re	quest of launching	area personnel, repor	rt BEACON LOST	
	h	Set the E	BURST EN ABLE an	d BURST ORDER s	witches to NORMAL	
	Ī.	Set the C	OMMAND ORIGI	N switch to NORMA	Ĺ	
	J	At the re	quest of launching	area personnel repoi	t BEACON RECEIVED	
	h				ABLE switch to DISABLE	
	1	If necess	ary, repeat the proc	redures in steps 4, 5,	6 above for all missiles,	
7.	Return the system to normal operation.					
	a.	Rotate t.	he HV SUPPLY Kin	ob to START and d	epress the HV SUPPLY OFF switch	
	ь	On the i	nissue track indicate to the down position	tor set the LOCAL	DESIGNATE and MISSILE READY	
	C	Notify ti	ne launching contro	i console operator t	hat the checks have been completed.	
	d	Nofity tr	e computer operate	or that the checks ha	ve been completed	

(U) Table 3-13.1 Weekly AGC Monstor Checks-MTR

Stop	Opes	ation	Normal ladiestion	Corrective procedure	
1.	Prepare for the AGC momtor check.				
	a.	 On the missile track control drawer, set the TEST switch to TEST and the DISABLE switch to DISABLE. 			
	ь	On the AL and	missile track control power stadjust the receiver GAIN con	apply, set the AGC-MANUAL switch to MANU trol fully clockwise	

(U) Table 3-13.1 Weekly AGC Monitor Checks-MTR: Continued

Step	Speration	8 iranal indication	Carrective pracedure			
2.	Check the le	vel 1 operation.				
	5e If t		eter indications noted in table 3.13 steps 2c and a missive select the meter indication that correspond signal.			
	b While o	While observing the DSI indicator on the AGC monitor amp, fier, slowly adjust the receiver GAIN control counterclockwise until the indicator just illuminates				
		The RECEIVED SIGN meter indication selecte	JAL meter indicates 0.25 to 0.75 less than the d in a above.			
			Adjust the receiver GAIN control to obtain a meter indication 0.5 less that that selected in a above. On the AGC monitor amplifier, adjust variable resistor R4 clockwise until DSI is no alluminated, then slowly counterclockwise until DSI just illuminates.			
			Refer to figure 17			
3.	Check the le	vel 2 operation.				
	a Adjust t	the receiver GAIN control fu	lly clockwise			
	b. Determ step 2d	ne and record the RECEIV! or 5f, which corresponds wif	ED SIGNAL meter indication noted in table 3-13 th the number selected in step 2a above			
			parfier, depress and hold the PRE ATT switch			
	d While o	bserving the DS1 indicator i GAIN control counterclock	on the AGC monitor amplifier, slowly adjust the wise until the indicator just illuminates			
	The RECEIVED SIGNAL meter indicates 0.25 to 0.75 less than the value recorded in b above.					
			Adjust the receiver GAIN control to obtain a meter indication 0.5 less that that noted in b above On the AGC mointer amplifier, adjust variable resistor R3 clockwise until DSI is no illuminated, then slowly counterclock wise until DSI just illuminates.			
	a Palassa	AT- THE ACTION A	Refer to figure 17			
		the PRE ATT switch.				
4		he switch positions.	and the DISABLE switch to the down position			

C3

d la	Operation	Normal indication	Corrective proce	dure		
1.	(Deleted)					
2.	Perform the daily TRR transmitter checks. Perform the procedures in table 2-22, steps 1, 2, and 3					
3.	Check the vo	ltages at the antenna				
		range antenna support bond observe that meter ind	ase, set the METER switch dications are as specified	to the positions indicate		
	G. TI	LANS B MAG CUR	Within green block	Refer to figure 83.		
	(2) TE	RANS BOMOD CUR	Within green block \$1/4 inch	Refer to figure 83		
1	(3) TF	RANS B-MOD HV	Within green block +1/4 inch	Refer to figure 83		
- 1	(4) +3	50V	Within green block	Refer to figure 83		
	(5) +3		Within green block	Refer to figure 83		
	(6) ~		Within green block	Refer to figure 83		
	(7) +1		Within green block	Refer to figure 83		
	(8)		Within green block	Refer to figure 83		
	(9) +2		Within green block	Refer to figure 83.		
		RANS A MODHV	Within green block ±1/4 inch	Refer to figure 83		
	(11) TI	RANS A-MOD CUR	Within green block ±1/4 inch	Refer to figure \$3		
		ians a-mag cur eter off	Within green block	Refer to figure 83.		
	On the range antenna support base, set the ANTENNA switch to DISABLE and the BLOWER switch to OFF					
	On the meter control indicator in the range receiver transmitter, set the TEST METER switch to the positions indicated below and observe that meter indications are as specified					
	(1) TF	RANS B-MAG CUR	W thin green block	Refer to figure 83		
	,	RANS B-MOD CLR	Within green block ±1/4 inch	Refer to figure 83		
		RANS B-MOD HV	Within green block ±1/4 inch	Refer to figure 83		
	(4) +3		Within green block	Refer to figure 83.		
	(5) +1		Within green block	Refer to figure 83.		
	(6) -2		Within green block	Refer to figure 83.		
	(7) +2		Within green block	Refer to figure 88		
		ANS A~MOD HV	Within green block ±1/4 inch	Refer to figure 83		
		IANS A MOD CUR	Within green block ±1/4 inch	Refer to figure 83		
		tans a—mag cur eter off	Within green block	Refer to figure 83		

Corrective pracedure

Step 3. Operation

Continued

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III. Table 3 Id Weekly Transmitter Checks TRR Continued

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d. On the countermeasures control indicator rotate the MOD A HV and MOD B HV knobs fully

Normal reducation

	counterclockwise
	e. Depress the MAG A -HV OFF and MAG B. HV OFF switches.
4.	Check the frequency indicators for magnetron A.
	a. On the meter control indicator in the range RF control power supply group, set the TUNING TRANSMITTER switch to A FAST and the AUTO: -MAN PAN NO LOSS switch to MAN
	b Operate and hold the FREQ switch on the meter control indicator to the INCR position until the magnetizen tuning dial on magnetizen A stope.
	The magnetron tuning dial indicates a value corresponding to the F5 dial setting as stamped on the magnetron.
	(1) Disconnect the tuning drive flexible shaft from the right- angle drive end of the tuning drive
	(2) Manually tune magnetron A to the F6 dial setting
	(3) Connect the tuning drive flexible shaft to the tuning drive If necessary, rotate the shaft slightly to engage the spline.
	The magnetron frequency meter on the range RF control-power supply group indicates 5.
	Adjust FREQ MTR TRIM MAG A variable resistor R14
	Refer to figure 88.
	c Operate and hold the FREQ switch to the DCR position until the magnetron tuning drive on magnetron A stops
	The magnetron tuning dial indicates within 0.05 dial units of the Fl.4 setting stamped on the magnetron.
	(1) On the tuning drive, loosen the locknut on switch S4
	(2) Operate the FREQ switch to INCR to move magnetron A from the stops.
	,3) Make a slight adjustment to

switch S4
(4) Repeat c above.

setting.

(5) Tighten the locknut using care not to change the switch

		tU Table 3-14 Weekly Transmitter		
Step	Spin et trip	Sormal indication	Angle par sidu	
4.	Continued			
		The magnetron frequency	meter indicates 1.4.	
			Adjust FREQ MTR TRIM MAGA variable resistor R12, and repeat b and c above to eniminate interaction	
			Refer to figure 88	
. !	d Set the T	UNING TRANSMITTER switch to	A SLOW	
	e. Operate t	he FREQ switch		
		Magnetron A can be tuned	1.	
			Refer to figure 88	
	f Set the T	UNING TRANSMITTER sw tch to indication on the FREQUENCY ma	A FAST and operate the FREQ switch to obtain ster	
5.	Check the frequency indicators for magnetron B.			
	a Set the TUNING TRANSMITTER switch to B FAST			
		and hold the FREQ switch on the mi on tuning dial on magnetron B stope	eter control indicator to the INCR position until th	
		The magnetron tuning di- dial setting as stamped on	al indicates a value corresponding to the F the magnetron.	
			(1) Disconnect the tuning driv flexible shaft from the righ angle drive end of the tunin drive	
			(2) Manually tune magnetron to the F5 dial setting	

(3) Connect the tuning drive flexible shaft to the tuning drive. If necessary, rotate the shaft slightly to engage the spline

The magnetron frequency meter on the range RF control-power supply group indicates 5.

Adjust FREQ MTR TRIM MAG B variable resistor R7. Refer to figure 88.

c Operate and hold the FREQ switch to the DCR position until the magnetron tuning dial on magnetron B stops.

The magnetron tuning dial indicates within 0.05 dial units of the F1.4 setting stamped on the magnetron.

> (1) On the tuning drive, loosen the lockmut on switch S3.

(U) Table 3-14 Weekly Transmitter Checks TRR -Continued

Gegs	Operation Nummin indicacion	Corrective procedure
5.	Continued	
		(2) Operate the FREQ switch to INCR to move magnetron B from the stop.
		(3 Make a slight adjustment to switch S3
		(4) Repeat c above
		(6) Tighten the locknut using care not to change the switch setting.
1	The magnetron frequenc	y meter indicates 1.4.
		Adjust FREQ MTR TRIM MAG B variable resistor R5, and repeat b and c above to eliminate interaction Refer to figure 88
	d Set the TUNING TRANSMITTER switch t	
j	e. Operate the FREQ switch	
	Magnetron B can be tune	ed.
1		Refer to figure 88
	f Set the TUNING TRANSMITTER switch midscale indication on the FREQUENCY r	to B FAST and operate the FRLQ switch to obtain a neter
	g Set the TUNING TRANSMITTER switch t	REMOTE.
۱	Callbrate the RF power test set.	
	a. On the RF power test set in the range RF co to 0.	ntrol power supply group, set the SCALE - db switch
	6. Set the ADJMEAS switch to V	
	The test set meter indica	tes V (full scale).
		Adjust the V ADJ knob on the test set
		Refer to figure 73.
	c. Set the ADJ—MEAS switch to ≈	
	The test set meter indica	tes ∞,
		Adjust the \approx ADJ knob for a meter indication as close to \approx as possible
ľ		Refer to figure 73.
	d Set the ADJ-MEAS switch to 0	
	The test set meter indica	tes 0 (full scale).
		Adjust the 0 ADJ knob. Refer to figure 73
		AND AR

(U) Table 3-14 Weekly Dransmitter Checks TRR Continued

ηp	Operation - Normal industrion	fillings, se procedure
	Continued	
	e. Set the ADJ MEAS switch to MEAS.	
	Check the metering circuits.	
	a Have the director stat on operator select the LOPAR n	node of operation
	b Verify that the MP mode is not selected	
	c On the meter control indicator in the TRR antenna pe	edestal, set the PULSE switch to LONG
	d On the countermeasures control-indicator depress the MOD A HV knob to obtain an indication in the center	e MAG A—HV ON switch and adjust the of the green block on the MAG A meter
	e Depress the MAG B HV ON switch, and adjust the I the center of the green block on the MAG B meter.	MOD B HV knob to obtain an indication ii
	f. On the target antenna control group, depress the MP:	switch
	The MP ON indicator light of illuminates.	on the pulse generator indicator
	The MAG A and MAG B meter in green block.	dications remain in the center of the
		On the meter panel in the rang antenna support base, adjus variable resistor MAG A MI ADJ for MAG A, or MAG B MI ADJ for MAG B.
		Refer to figure 83.
	g Depress the MP switch.	
	The MP ON indicator light extin light illuminates.	guishes, and the MP—OFF indicato
		Refer to figure 65
	h Have the director station operator select the HIPAR n	node of operation
	The MAG A meter indication is in	the center of the green block.
		On the meter panel in the rang antenna support base, adjust th PRF SET variable resistor
	The MAG B meter indication is in	the green block.
		Refer to figure 83
	Have the director station operator select the LOPAR a	node of operation.
	Check the transmitted power in the LOPAR long	pulse mode.
	a. Verify that the ANTENNA switch is set to DISABLE	
	On the meter control indicator in the range RF control to LONG and the TRANS ON ANT switch to A.	
	c Set the TUNING TRANSMITTER switch to A SLOW	1

U. Table 3-14 Weekly Transmitter Checks-TRR-Continued

Opr	ra con	Normal and rate n	Corrective pricedule	
Co	ntinued	•		
4.0	indication of	efroming the procedure is dibeliess, han dion the test mover is in terms of db down from 48	An ind carion beyond 0 in the right) a permissib	e T
d	through term no	the entire hand. At the lo	meter control indicator to tune the magi- w middle, and high positions on the bac- ne test meter indication to the indication	rd o
		The final computed db the band, 3.5 db at mid	ndication does not exceed 3 db at the low band, or 4 db at the high end of the band.	
			Perform the procedures in table step 4a, Perform the procedu table 5-13, steps 2b through 2e	
		No erratic indications o	ccur on the RF power test set meter	
			Check for RF arcing	
			Refer to figure 73	
€		TRANS ON ANT switch t_0 , and repeat d above	B set the funing TRANSMITTER swi	iten
Ch	eck the tra	nsmitted power in the LOP	AR short pulse mode.	
g			the PULSE switch to SHORT the TRASTER AND A FAST	NS I
ь	possible		btain an on-scale indication as near full s	
c	PAN NO		t the AUTO MAN-PAN NO LOSS swi F power test set by performing step 6b to I NO LOSS switch to MAN	
ď	trans of	the band. At each position to the indication of the S	he magnetron to the low, middle, and hig n, repeat b and c above and add the test CALE—db switch	
			indication does not exceed 10 db at the le t midband, or 11 db at the high end of the	
			Perform the procedures in table step 4a Perform the procedu- table 5-13, steps 2b through 2 then repeat step 9 above.	res
e		TRANS ON ANI switch t , and repeat c and d above.	b B, set the TUNING TRANSMITTER sw	itch
f	Set the MOTE	SCALE db switch to 0 as	ad the TUNING TRANSMITTER switch	to l
g	Set the I	BLOWER switch to ON and	the ANTENNA switch to NORMAL	
i				

(U) Table 3-14 Weekly Transmitter Chechs-TRB "Continued UNCLASSIFIED

Step	Upeta irin	% ideal andications	Corrects e procedure
10	a Ritate	s the MAGA HV OFF and	HV knobs fully cunterclockwise the MAG B- HV OFF switches incator, set the MAN AUTO switch to AUTO

(U) Table 3-14.1 Weekly Target AFC Checks—TRR UNCL ASSIFIED

Step	Opention	Normal indicates of	Corrective procedure	
	Perform the	procedures in table 2:23.		

(U) Table 3-14.2. Weekly Range System Checks-TRR UNCLASSIFIED

Step	Operation	Normal indication	Contective procedure
	Perform the	procedures in table 2-24	

(U, Table 3-14-3, Weekly Lin-Log Receiver Checks-TRR UNCLASSIFIED

Step	Opezation	Normal ardiestion	Corrective procedure
	Perform the	procedures in table 2-25	

(U, Table 3-14.4 Weekly Panaramic Receiver Checks-TRR

Step	Operation	Norma, indication	Conrective procedure	
	Perform the	procedures in table 2-26		

(U, Table 3-15 Weekly Countermeasures Control Inductor Checks-TRR

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Step	Operation	Normal indication	Corrective procedure	
1.		or the countermeasures control-		
	a. Peri	orm the procedures in table 2-1		

Omit this step I the checks in the preceding tables have been performed in sequence

Step

Operation

(U) Table 3-15 Weekly Countermeasures Control Indicator Checks-TRR-Continued

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Cozzective procedure

Norma Indication

1	Continued			
	a 1 Perform the daily target APC check	k procedures in table 2-23		
	b On the range radar power control- is set to OPERATE	andicator, verify that the TEST-OPERATE switch		
	c On the target track contror-power	supply, verify that the TRR PULSE WIDTH switch		
	d On the countermeasures control in to AUTO	idicator, verify that the MAN-ALTO switch is se		
	Note: As awarders, knobs, and meters in attended control indicator unless otherwise indicated	eps 2 through 5 below are localed on the countermeasure		
2,	Energize the A and B transmitters,			
	 a Rotate the MOD A HV knob fully 	counterclockwise		
	b. Depress the MAG A-HV ON swite	h		
	c Adjust the MOD A HV knob to meter green block	obtain an indication in the center of the MAG A		
	d. Repeat a through c above, subst.tui	ting B for A		
8.	Check the panoramic sweep display,	4		
	a. Observe the upper sweep.			
	The presentation is well focused with a minimum of distortion.			
		Adjust the PAN FOCUS and PAN IN TENSITY controls if required, adjust the ASTIGMATISM control inside the countermeasures control indicator (lef rear).		
		Refer to figure 75.		
	The sweep is approximeasures control-indic	mately 1/2 inch above the center of the counter		
		On the video amplifier, adjust the PAN VERT CENT control,		
		Refer to figure 75.		
	The sweep starts just inside the left edge of the indicator.			
		On the panoramic sweep generator, ad just the HOR CENT variable resistor.		
		Refer to figure 75,		
	The sweep extends jus	t to the right edge of the indicator		
		On the panoramic aweep generator, ad		

just the IND SWP LG variable resistor Refer to figure 75.

C3

(U) Table 3-15. Weekly Countermeasures Control Indicator Checks-TRR-Continued

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Oye	cation Norsell (editorion Corrective procedure
Per	form the initial adjustment of the panoramic oscillator sweep circuits.
а	Set the MAG SEL switch to A, and operate the FREQUENCY switch to tune magnetion A to the low frequency stop
a 1	Set the MAG SEL switch to B, and operate the FREQUENCY switch to tune magnetron B to the high frequency stop
a 2	On the panoramic sweep generator, observe the waveform on an oscilloscope that a connected to the TIMING test point
	A nonsymmetrical square wave is observed,
	Refer to figure 75
	The negative time duration is within 8,7 and 9.7 milliseconds.
	On the countermeasures range swee generator, adjust the PAN TIMING 9 2M SEC variable resistor for a 9.2 millisecond duration
	Refer to figure 75.
	The positive time duration is within 2.1 and 2.5 milliseconds.
	On the countermeasures range swee generator, adjust the PAN TIMIN 2.3M SEC variable resistor for a 2.3 nullisecond duration
	Refer to figure 75
Ď.	Disconnect the oscilloscope
c	On the panoramic sweep generator, verify that the PAN LINEARITY control is 60 fully clockwise. Set the PAN SWP AMP control approximately 16 degrees counted clockwise from the maximum clockwise position.
d	Establish telephone communications between the TTR console and the TRR antenna
e	At the range antenna support base, set the ANTENNA switch to DISABLE and the BLOWER switch to OFF
f	On the meter control-indicator, set the AUTO-MAN PAN NO LOSS switch to AUTO
g	On the panoramic sweep control located in the range RF control power supply group adjust the HIGH SET control until two pairs of frequency pips are just visible on the countermeasures control-indicator
h	On the panoramic sweep control, adjust the LOW SET control until the two pairs of frequency pips are equally distant from the ends of the sweep
t .	Adjust the HIGH SET control to place the two pairs of frequency pips 1/8 inch from the ends of the sweep.
	Set the AUTO-MAN-PAN NO LOSS switch to MAN

(U) Table 3-15. Weekly Countermeasures Control-Indicator Checks—TRR Continued CONFIDENTIAL

Step	Operat on	Normal indication	Cozpective procedure			
4.	Continued	· · · · · · · · · · · · · · · · · · ·				
ĺ	j. Set the	BLOWER switch to ON and	the ANTENNA switch to NORMAL			
5.	Check the ad	justments of the panoramic	oscillator circuits.			
		MAG SEI switch to A, and frequency stop.	operate the FREQ switch to tune magnetron A to			
		MAG SEL switch to B, and frequency stop	operate the FREQ switch to tune magnetron B t			
	c, Observe	the panoramic sweep,				
		A pair of frequency pip	os appears within 3,16 inch of the sweep ends.			
			(1) On the TRR antenna support base set the ANTENNA switch to DIS ABLE and the BLOWER switch to OFF, Perform the procedures in table 3-14, steps 4, 5, and 9g Range at through c above			
			(2) Repeat the procedures in step 4 through c above			
			Refer to figure 75,			
6,	Deenergize th	e A and B transmitters.				
	a On the countermeasures control-indicator, rotate the MOD A HV knob fully counter clockwise and depress the MAG A~HV OFF switch					
		countermeasures control-ind se and depress the MAG B—	licator, rotate the MOD B HV knob fully counter HV OFF switch			
7.	Reestablish n	ormal operation,				
	Break down	the telephone communicati	ons between the TRR antenna and the TIR con			

(U) Table 3-15-1 Weekly Automatic Channel Selector Checks-TRR

Step	Operation	Normal indication	Carrective procedure	
	Perform the procedures in table 2-28.			

(U, Table 3-16, Weekly Boresight Checks-TRR

			UNCLA	SSIFIED			
Stop	Open	ntlon	Normal Indication	Corrective procedure			
1.	Prep	are for t	he collimation checks.				
	G.	Perform	the procedures in table 2	LT.			
	ь		target antenna control grou 40,000 yards.	p rotate the range handwheel to set the TTR range			
2,	Ene	rgize trai	nsmitter A in the TRR.				
	a,	Perform	the procedures in table 2-2	22, steps 1 and 2			
	ь	On the	target track contropowe	r supply, set the TRR PULSE WIDTH switch to			
		arning. \ o 1,600		nuth in the following procedures, elevate the anten-			
3.	Inst	Install the antenna test set.					
	a.	On the	TRR antenna support base,	set the ANTENNA switch to DISABLE.			
	a. 1		t the antenna test set to the antenna support base.	e LOCAL ANTENNA CONTROL UNIT connector			
	b.	Set the	CONTROL switch to ANT				
	c.	Set the	RF TEST SET switch on th	e range antenna support base to ON			
			ndications below consistently notion exists and the local supp	fall out of the loierance limits and require frequent adjust- ort unit should be notified			
	d.	Set the	ANTENNA switch to NOR	MAL.			
4.	Che	ck the az	amuth almement of the rad	ar beam,			
	a .	e.evatic		ne target range antenna to the plunged azımuth and test set as indicated by maxımum deflection on the er			
			The ANTENNA BEAR	d POSITION meter inducates 100.			
				Adjust the GAIN knob on the antenna test set. If an indication of 100 cannot be obtained, set the GAIN knob to midposition and adjust variable at- tenuator AT1 in the K _U band attenua-			
				tor-detector in the radar test set.			
				Refer to figure 94.			

indication as A.

Rotate the target range antenna clockwise in azimuth until an indication of 50 is obtained on the ANTENNA BEAM POBITION meter. Record the AZIMUTH DIAL

Omit this step if the checks in the preceding tables have been performed in sequence.

U. Table 3-16 Weekly Baresight Checks-TRR-Continued

Step	Ope	ratios	Normal codication	Corrective procedute	
4.	Со	ntinued			
	c Rotate the target range antenna counterclockwise in azimuth until an indication of 50 is obtained on the ANTENNA BEAM POSITION meter. Record the AZIMUTH DIAL indication as A _d .				
	d	Calcula	te the center value between a	A, and Ad, and record this value as A	
	ė	-	s greater than 3,200 mis, s 00 mils. Record the result.	subtract 3,200 mils. If A_1 is less than 3,200 mils,	

111. Table 3-16. Weekly Boresusht Checks-TRR-Continued

UNCLASSIFIED							
Step	Operation.	Normal reducation	Carrective procedure				
4.	Continued						
	f Position the target range antenna to the normal coordinates of the radar test set group as indicated by maximum deflection on the ANTENNA BEAM POSITION meter						
		The ANTENNA BEAM POSITION meter indicates 100.					
			Adjust the GAIN knob on the antenna test set				
			Refer to figure 94				
			azimuth until an indication of 50 is obtained on the differential DIAL indication as A ',				
	h Rotate the	target range antenna counterc.ock	wise in azimuth until an indication of 50 is obtained				

- on the ANTENNA BEAM POSITION meter Record the AZIMUTH DIAL indication as A 'd.
-). Calculate the center value between A $_{\rm a}$ and A $_{\rm d}$, and record this value as A $_{\rm 2}$
- k Subtract the value of A, from the value calculated in e above

The difference does not exceed 0.3 mil.

(1) Calculate the value of A ', with the formula given below. If A₁ is greater than 3,200 mis, subtract 3,200 mis. If A₁ is less than 3,200 mils, add 3,200 mils.

$$A'_r = \frac{(A_1 \pm 3,200) + A_2}{2}$$

- (2) Rotate the target range antenna in azimuth until an AZIMUTH DIAL indication of A ', is obtained.
- (3) While maintaining the antenna position, loosen the securing bolt on each side of the target range receiver-transmitter, and adjust the azimuth adjusting screw until the ANTENNA BEAM POSITION meter indicates a peak deflection.
- (4) Tighten the two securing bolts on the target range receiver-transmitter

III Table 3-16. Weekly Boresight Checks- TRR - Continued

	UNCLASSIFIED	
10.0	Operation - Not not into in-	a symptomist
4	Continued	(5 Return the antenna to the coordinates of the rudar test set group as prescribed in a above, and repeat step 4 until the 0.3-mil tolerance 18 obtained
5.	Check the elevation alinement of the radar bean	n.
	a. Using the antenna test set rotate the target range radar test set group as indicated by maximum defler meter. The ANTENNA BEAM POSITIO	ON meter indicates 100 Adjust the GAIN knob on the
		antenna test set.
		Refer to figure 94
	b Using the antenna test set, slowly increase the elevan indication of 50 is obtained on the ANTENNA E the elevation dial indication as E, c. Slowly decrease the elevation angle of the target.	SEAM POSITION meter observe and record
	obtained on the ANTENNA BEAM POSITION met	ter Record the elevation man improvious manage
	d Calculate the center value between E, and Ed, a	nd record this value as E ₁ .
	Subtract E. from 3,200 mils, and record this value.	
	f Position the target range antenna to the normal indicated by maximum deflect on on the ANTENN	A REAM LOSITION meter
	The ANTENNA BEAM POSITI	ON meter indicates 100.
		Adjust the GAIN knob on the antenna test set
	g Slowly increase the elevation angle of the target obtained on the ANTENNA BEAM POSITION me	ter Record the elevation dis mateurion as a .
	h Slowly decrease the elevation angle of the target obtained on the ANTENNA BEAM POSITION me	fel, lescour the clearmon digit intercarron man fi
	t Calculate the center value between E and E d, at	nd record the value as E2
	J Subtract the value of E₂ from the value of E₁ calcul	lated in e above
l	The difference does not exceed 0	(1) Perform the procedures in f above
		(2) Calculate the value of \mathbb{E}^{*} with the formula given below. $3,200 - \mathbb{E}_{1}) + \mathbb{E}_{2}$

(3) While still positioned to the coordinates of the radar test

Larective procedure

Step

5.

4 Pper habitates

Continued

Normal indication

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(U) Table 3-48 Weekly Boresight Cheeks-TRR Continued

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set group, remove the UNLOCK-LOCK p.ugfrom the elevation correction transmitter, and insert the socket-head screw key to unlock the input gear
Caution: When locking or unlocking the input gear, rotate the socket-head screw key until the positive stop is engaged. Do not use a torque wrench.
(4) Turn the screw key approx- imately nine turns coun- terclockwise to the positive stop position
(5) Remove the cap and rotate the elevation adjustment knob until the elevation dial indicates E ';
Caution: When locking the input gear, do not stop at the point of maximum torque reaction which occurs at four or five turns clockwise from the extreme counterclockwise (unlocked) position. Operation under this condition results in damage to the elevation correction transmitter.
(6) Starting from the extreme counterclockwise (unlocked) position, turn the sockethead screw key clockwise approximately nine turns to the positive stop.
(7) Repeat step 5 until the 0.3-mil tolerance is obtained.

Deenergize the TRR transmitter.

a. Rotate the MOD A HV knob fully counterclockwise b. Depress the MAG A - HV OFF switch.

(U) Table 3-16. Weekly Buresight Checks-TRR Continued

UNCLASSIFIED

T	Öpemt	ton Normal inde	cation Corrective procedure			
T	Retu	m the system to norms	al operation			
	a. Set the RF TEST SET switch to OFF					
	6 On the antenna support base, set the ANTENNA switch to DISABLE '					
	c Remove the antenna test set and return it to storage.					
		Set the ANTENNA sw				

Dmit this step if the checks to the succeeding tables are to be performed in sequence

(U) Table 3-17 Weekly Telescope Collimation Checks-TRR

			DINCLA	SSIFIED				
Step	Open	illon	Normal indication	Corre	ctive procedure			
1.			weekly horesight checks." procedures in table 8-16					
2.	Prep		he telescope collimation ch					
	В	On the	antenna support base, set t	se ANTENNA s	witch to DISABLE			
	b		t the antenna test set to th FRR antenna support base.		ENNA CONTROL UNIT connector			
	С	Install (he sighting telescope in the	norma, positio	n in the telescope mount			
	d.	Set the	ANTENNA switch to NOR	MAL.				
3.	Che	Check the telescope collimation in azimuth (perpendicularity)						
	а	Using t	he antenna test set control scentered on the vertical re	s, adjust the ta ticle of the sigh	rget range antenna so that a distant iting telescope			
	b	Note at	nd record the indication on	the azimuth co	rrection transmitter			
1	с		the sighting telescope in the					
	d	Plunge target	the antenna in elevation an observed in a above is cent	d adjust elevation of the version on the version on the version of	on and azimuth as necessary until the tics, reticle of the sighting telescope.			
	e	Note at	nd record the indication on	the azimuth co	rrection transmitter			
-			The indications in b	nd e above are	within 0.1 mil.			
				(1)	Add the indication in 5 above to the indication in e above and divide by 2.			
				(2)	Move the antenna in azimuth until the azimuth correction transmitter indicates the value calculated in (1) above.			

[&]quot;Omit this stop if the checks in the preceding tables have been performed in sequence

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(U) Table 3-17 Weekly Telescope Collimation Checks-TRR-Continued

UNCL ASSIFIED

Step	Open	tilps:	Normal tadication	Corr	ective procedure			
3.	Con	hnued						
				(3)	Adjust the azimuth adjusting screw on the telescope mount until the target is centered on the vertical reticle of the telescope.			
				(4)	Repeat steps 2b through 3e above			
4.	Che	ck the teles	cope collimation in eleva-	tion.				
	а	a Using the antenna test set controls, adjust the target range antenna so that a distant target is centered on the horizontal reticle of the sighting telescope						
	ь	Note and	record the indication on t	he elevation c	orrection transmitter			
	c	c Plunge and rotate the antenna until the target in a above is centered on the horizoni reticle of the nighting telescope						
	đ	d Note and record the indication on the elevation correction transmitter						
	е	ve from 3,200						
	The value calculated is within 0.1 mil of the value obtained in							
				(1)	Algebraically subtract the value re- corded in d above from 3,200, algebraically add the result to the value recorded in b above, and di- vide by 2. Algebraically subtract this result from 3,200			
				(2)	Position the antenna to the value calculated in (1) above,			
				(3)	Loosen the three sighting telescope mount elevation locking bolts and the locking muts on the sighting telescope adjusting screw			
				(4)	Adjust the elevation adjusting screw until the target is centered on the horizontal reticle of the sighting telescope,			
				(5)	Tighten the elevation locking bolts and the adjusting screw locking nuts.			
5.	Reta	um the TR	R to normal operation.					
	α,	Return th	e antenna to zero elevatio)TL,				
	ь.	On the an	tenna support base, set th	e ANTENNA	switch to DISABLE.			

d. Set the ANTENNA switch to NORMAL.

Disconnect and store the antenna test set, and return the telescope to storage

(U) Table 3-18. Weekly Remote Switching Checks-TTR and TRR

Slep	Operas	ton Animal indication	Contestive procedure				
1.	Prepi	Prepare for the remote switching checks.					
		Set the TTR range to appro					
	b	On the target antenna conf	tro, group, set the TEST switch to the down position				
	c	On the range radar power	control indicator verify that the TEST OPERATE switch				
	d		, power supply, set the switches as indicated				
	"	Switch	Setting				
		IND	A				
		TTR PULSE WIDTH TRR PULSE WIDTH	LONG LONG				
2	Ener	gize the TTR transmitter.					
-	a		tol-power supply, rotate the HV St PPLY knob to STAR'				
	ь	Adjust the HV St PPLY k TRON meter white block	trob to obtain an indication in the center of the MAGNI				
3.	Ener	Energize the TRR A and B transmitters.					
	a	The second secon					
	b.	the state of the s					
	c.	Repeat a and b above, sub	stituting B for A.				
4.	Check the remote switching from the target track control-power supply						
	a		control, set the LOC REM switch to LOC				
			ted switches on the remote transmitter control are illu				
			Verify that the DIMMER control fully clockwise. Refer to figure 65				
		te All controls and edicators by unless otherwise indicated.	i in δ through e below are located on the larget track control-pow				
	Ь		Y switch to DECREASE and then to INCREASE				
			on on the FREQUENCY meter does not change in enhance				
			Refer to figure 47.				
	b I	Position the TTR antenna Operate the RF INTERRI	a to obtain video on the lower trace of the range indicato				
	"	•	ation on the upper trace of the range indicator does in				
			Refer to figure 65				
		P-4 N- MDD DILLOR BUS					
	ď	Set the TKK PULSE WID	TH switch to SHORT and then to LONG				

(U. Table 3 18 Weekly Remote Suntching Checks - TTR and TRR - Continued

Step	Operation	Normal sudscution	Corrective procedure
4.	Continued		
		The size of the expanded ar does not change.	ea on the lower trace of the range indicator
			Refer to figure 65
	e Set the IND s	witch to R and then to A	
		The size of the expanded ar does not change.	ea on the lower trace of the range indicator
			Refer to figure 65
	Note: A Leontrols	in steps 5 and 6 below are located on th	e remote transmitter contro
5.	Check the rem	ote switching for the TRR.	
	a Set the TRR	XMTR MAN SEL-XMTR AU	FO SEL switch to XMTR MAN SEL.
	δ. Set the TRR	MAG switch to A	
		The pedestal appears unde countermeasures control in	er the magnetron A frequency pipa on the adicator
			Refer to figure 88.
	c Operate the T	RR FREQ switch to DECR and	then to INCR
			wer the entire frequency range as indicated ncy pips on the countermeasures control-

d Set the TRR -- MAG switch to B.

The pedestal appears under the magnetron B pips.

Refer to figure 88

Refer to figure 88

e Set the TRR-PULSE switch to SHORT and then to LONG

The size of the expanded area on the lower trace of the target range indicator changes (the expanded area is wider in the short pulse mode).

Refer to figure 89.

f (Deleted)

g. Operate the TRR-PAN switch to NO LOSS.

The video disappears from the lower trace on the target range indicator $$\operatorname{Refer}$ to figure 88

h Set the TRR-XMTR MAN SEL-XMTR AUTO SEL switch to XMTR AUTO SEL.

The pedestal disappears from the upper trace.

Refer to figures 75 and 88.

i. Operate the TRR--FREQ switch to DECR and then to INCR

Magnetron B can be tuned as indicated by the magnetron B frequency nips on the countermeasures control-indicator.

Refer to figures 75 and 88.

(U) Table 3-48. Weekly Remote Switching Checke-TTR and TRR: Continued UNCLASSIFIED

	Орегания	8, stud moration	forer is besending							
6.	Check the remote switching for the TTR									
	 a. Operate t 	he TTR-RF INTER switch								
		The video disappears f	from the top trace on the target range indicator							
			Refer to figure 65							
	b Operate t	he TTR-FREQ switch to !	DECR and then to INCR							
		The indication on the power supply decreases	FREQUENCY meter on the target track controls and then mereases.							
		P	Refer to figure 47							
	c. Set the II	ND switch to R and then to	A A							
	L. 207 444 -4		ded area on the lower trace of the target range							
			Refer to figure 65							
- 1	d Set the L	OC REM switch to REM								
		The back lighting for al	ll switch indicators extinguishes.							
			Refer to figure 65							
7	Danagera the	TTR transmitter.	•							
	On the target		by rotate the HV SLPPLY knob to START and							
В.	Deenergize the	TRR A and B transmitter	°S.							
		rountermeasures control n lly counterclockwise	dicator, rotate the MOD A HV and MOD B HV							
			MAG B-HV OFF switches.							
9		e switch positions.								
*		antenna control group set	the TESI switch to TEST							

(U), Table 3-19. Weekly Track Data Processor Checks UNCLASSIFIED

Suep	Oper	Llan	Normal indication	Carrective pracedure					
1.	Peri	form the p	procedures in table 2-30.						
2.	Prepare for additional track data processor checks.								
	a.	On the		indicator insure that the TEST-OPERATE switch					
	b	On the	target antenna control group	p, set the TEST switch to TEST					
		Note .	A switches and indicators are o	eated on the track data processor unless otherwise indicated.					

Open this step if the checks in the preceding tables have been performed in sequence

(U) Table 2-19. Weekly Track Data Processor Checks-Commund

	· ·	UNCL ASS	
lesi	Operation	Norms adjustion	Contective procedure
3.	Check the mi	croprocessor operation	
	a. Depress	and hold the RESET switch	
		After approximately on	e second, the RUN indicator extinguishes.
			Refer to figure 78 1
	Note Disregi switch is operat		POSITION DIFFERENCE and cators while the RESET
	b. Release	the RESET switch	
		The RUN indicator iLun	ninates.
			Refer to figure 78 1
		No error message is indi-	
			Refer to table 5-29, steps 3 and 4
	c Moment	tarily hold MODE SWITCH b	etween any two detent positions
		The listed error message	is generated
		Δh =00 Δx =EE Δy =01	
			Refer to table 5-29, step 4
	d Set the	BANK SELECTOR switch t	O BANK 2 and MODE SWITCH to TACTICAL
		The RUN and NON TAC	CTICAL indicators are illuminated.
			Refer to figure 78 1
-		On the target track columnated	ontrol console, the TDP FAULT indicator is il-
			Refer to figure 78.1
		The listed error message	is generated.
		∆h =00	
		Ax =EE	
_ !		∆y =02	Defeate to table P.OO. store 4
	e. Set the	BANK SELECTOR switch to	Refer to table 5-29, step 4
, ,			BANK I
4.		FR/TTR parallax entry. WITCH to TEST MTR/TTR	
		The RUN and NON-TAG	CTICAL indicators are illuminated.
			Refer to figure 78 1
		The POSITION DIFFE the MTR/TTR PARALL	RENCE (YDS) indicators indicate the same as .AX (YDS) switches.
			Refer to figure 78 1

securings indicate-

Note. The N. E. and UP switch settings indicate +, and the S. W. and DN switch

(U) Table 3-19 Weekly Track Data Processor Checks—Continued
UNCLASSIFIED

Step	Opera in	Normal rid. a on	(Medice placedure				
Б.		R/TTR parallax entry. TTCH to TEST FRR/TTR					
		The RUN and NON TA	CTICAL indicators are illuminated.				
			Refer to figure 78.1				
		the POSITION DIFFI	FRENCE (YDS) indicators indicate the same in LAX (YDS) switches.				
			Refer to figure 78.1				
		Note: The N, E, and UP settings indicate:	switch sellings indicate +, and the S. W. and DN switch				
6.	Check the ope	ration of the serial data rec	eiver				
	a. On the T	TR RSPU, set the MODE sy	witch to TEST				
	b. On the M	TR RSPU, set the MODE's	witch to TEST				
	c. Have the computer operator perform the procedures in c.1 through e he ow						
	c I Energize 12-1.	the computer as prescribe	d in the daily power checks in TM 9-1430-1251				
	d On the ke	eyboard display enter 7 and	d depress CR				
	e Enter TD	P and depress CR					
	f Set MOD BANK 2	E SWITCH to SERIAL D.	ATA REC and the BANK SELECTOR switch is				
		The track data process do not display any error	sor POSITION DIFFERENCE (YDS) indicator message.				
			(1) Momentarily operate the RESET switch				
			(2) Perform the procedures in table 5-29, step 4				
			Refer to figure 78 1.				
		The red LED indicator of	on printed wiring board A4 is flickering.				
			Perform the procedures in table 5-29 step 3				
	g Set the T	TR RSPU and MTR RSPU	MODE switches to OPR				
7	Notify the con	nputer operator that the chi	ecks have been completed				
8.		switch positions,	·				
	a. Set MOD	E SWITCH to TACTICAL	and the BANK SELECTOR switch to BANK 1				
Ì	b Verify th (YDS) sw	at the required site MTR/T	TR parallax is set on the MTR/TTR PARALLAX				
	c Ver fy th (YDS) sw		TR parallax is set on the TRR/TTR PARALLAX				
	d On the r		indicator, set the TEST-OPERATE switch to				

(U) Table 3-20. Weekly Orientation Checks-TTR, MTR and TRR

		UNCLA	SSIFIED
Step	Operation	Normal indication	Corrective procedure
	Note 1	The procedures in tables 2 2, 3 7, 3-8 es in this table	3/16, and $3/17$ must be performed before performing the
1.	Perform	the procedures in table 2-1.	
2.	Install t	he aighting telescopes on the MT	R and TTR antennas.
	a. On	each antenna support base, set	the ANTENNA switch to DISABLE
		nnect the local antenna contro nnectors on each antenna.	ols to the LOCAL ANTENNA CONTROL UNIT
	e. On	the target track antenna, moun	t the sighting telescope in the normal position.
	d On	the missile track antenna, mov	ant the sighting telescope in the reversed position
	e Mo	unt the collimating target sights	on both sighting telescopes.
	f Set	the ANTENNA switches to NO	RMAL.
		If the indications below consistently maifunction exists and the local support	fal, out of the tolerance limits and require frequent adjust ort unit should be notified
3.	Check ti	he orientation of the TTR	
			position the target track antenna so that the tele in datum point (target of predetermined azimuth)
	b Ob	serve the indication on the azim	uth angle encoder duls.
		The	and a duly independ the entranth of the Image

The azimuth angle encoder dials indicate the azimuth of the known datum point 25 mils.

 Unscrew the cap and remove the UNLOCK-LOCK plug from the azumuth angle encoder.

Caution When locking or unlocking the input gear, rotate the socket-head screw key until the positive stop is engaged. Do not use a torque wrench.

- (2) Insert the socket-head screw key into the UNLOCK—LOCK plug and turn approximately nine turns counterclockwise to the positive stop position.
- (3) Rotate the knob until the dial indicates the azimuth of the known datum point.

^{*}Omit this step if the checks in the preceding tables have been performed in sequence.

U) Table 3-20 Weekly Orientation Checks - TTR MTR and TRR - Conumed LINCLASSIFIED

p	Operation	Normal indicación	differences photostation				
. [Continued						
			Caution: When lockin the input gear, do not stop a				
-			the point of maximum lorgu- reaction which occurs a				
			four or five turns from the extreme counterclockwise				
			(unlocked) position. Operation under this condition results in damage to the				
			angle encoder. (4) Starting from the extrem				
			counterclockwise position turn the socket head scre key clockwise approximate				
			nine turns to the positive ste position.				
	c. Check the azimuth indication on the TTR console.						
		The indication is the same	as the KDP value.				
			(1) On the TTR RSPU from panel, set the COORD SI LECT switch to A-FCN TY COORD DISPLAY indication equals the azimuth and cation on the TTR console				
			cation of the FTR console (2) Change the AZIMUT BORESIGHT setting ar momentarily depress the NTER switch until the KDP value is displayed to the COORD DISPLAY				
			(3) Record the AZIMUT BORESIGHT data				
	Check the	rientation of the MTR.					

- a. Using the local antenna controls, turn the missile track and target track antennas so that they are pointing in the same direction and the telescopes are facing each other.
- b. Position the two antennas so that the vertical and horizontal reticles at each telescope are centered on the white lines of the commating target sight on the other telescope.
- c. Note and record the indication on the missile track azimuth angle encoder. Designate the indication as $A_{\rm mis}$
- d Note and record the indication on the target track azimuth angle encoder Designate the indication as $A_{\rm t}$

(U) Table 3-20. Weekly Orientation Checks-TTR, MTR and TRR Continued

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itep	Opera	Hop	Normal indication	Corrective procedure					
4.	Con	timed							
	€.	Subtract	A, from A _m .						
			The difference is not g	reater than ±5 mils.					
			Int distriction in no. 9	Perform the corrective procedures in					
				step 3b(1) through (4) above for the MTR					
	f.	Check ti	e azimuth indication on th	e MTR console.					
			The indication is the sa	ime as the TTR value.					
				(1) On the MTR RSPU front panel, set the COORD SELECT switch to A- FCN. The COORD DISPLAY 18 the same as the azimuth LED dis- play					
				(2) Change the AZIMUTH BORE- SIGHT setting and momentarily depress the ENTER switch until COORD DISPLAY indicates the					
				correct value.					
				(3) Record the AZIMUTH BORE- SIGHT data					
	8	Note an indication		the missile track elevation indicator. Designate the					
	h	Note an		the target track elevation indicator. Designate the					
	l.	Subtract	; E _t from E _m .						
			The difference is not g	reater than 0.1 mil.					
				 Perform the procedures in tables 3-7 and 3-8. 					
				(2) Repeat the procedures in table 3 20.					
5.	Che	ck the or	ientation of the TRR in azi	neuth.					
*	a 1 a.‡.z	COMPLES.	The second second	set the ANTENNA switch to DISABLE					
	b.	Mount the collimating target sight on the TRR sighting telescope							
	b. 1.	Set the ANTENNA switch to NORMAL.							
	c	Verify t	Verify that the TTR range is greater than 25,000 yards.						
	ď	On the	antenna test set, set the CO	NTROL switch to ANT					
	•		CONFID	ENTIAL 3-55					

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c. Table 3-20 weekly Grientation Checks-TTR MTR and IRB Continued

		UNCLA	SSIFIED			
Step	Operation	Normal indication	Convective procedure			
5.	Continued		and the second			
	target r	he local antenna control an ange antennas so that they ses are facing each other	d the antenna test set, rotate the target track and are pointing in the same direction and the sighting			
	f Position on the	the two antennas so that collimating target sight on t	the reticles of each sighting telescope are centered be other telescope.			
	g Observe on the		MUTH DIAL on the azumuth correction transmitter			
	h Observe	the indication of the azimi	uth display on the TTR control console			
ł	Subtrac	t the indication in g above	from the indication in h above			
		The difference is not p	greater than 0.1 mil.			
			 On the TRR azimuth correction transmitter, perform the corrective procedures in step 3b (1) through (4) above. 			
			(2) Repeat step 5.			
6.		rientation of the TRR in ele of through above using the				
	·	The difference is not				
			a Perform the procedures in table 3 17, step 4			
			b. Perform the procedures in table 3-16, step 5, 2.a2.b.,3.c.,5.6			
			c. Repeat step 6.			
7.		mote onentation. ma test set, set the CONTR	OL switch to RCT.			
The retricles of the TRR sighting telescope remain centered limation target sight on the TTR						
			Adjust the ELEVATION SERVO CONTROL—ZERO ADJ knob on the antenna control computer to correct an elevation error.			
			Refer to figure 77.			
			A Administration AND LITTLE SERVICE COM-			

b. Adjust the AZIMUTH SERVO CON-TROL-ZERO ADJ knob to correct an azmuth error.

Refer to figure 76

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(U. Table 3-20. Weekly Orientation Checks-TTR, MTR, and TRR. Commund

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Stop	Oper	nidol:	Not may used catamis	Corrective priverdore			
8.	Ret	am the	system to normal operation.				
	а	On eac	h antenna support base, set tl	to ANTENNA switch to DISABLE			
	b Remove the sighting telescopes from the missile tracking, target tracking, tranging antennas						
	c			and the antenna test set from the missile track, as and return them to storage			
	d.	Set the	ANTENNA switches to NOF	RMAL.			

U. Table 3-20-1 - weekly Simultaneous Tracking Checks- TTR MTR and TKR

-	Step '	Operation	Normal Indication	Corrective procedure
		Perform the	procedures in table 2-32.	

CHAPTER 4 (C)

MONTHLY CHECK PROCEDURES

Note	In some	nsumees, or	mon ti	y check	may b	e the same a	9 2	daily or	weekly	chie	ik and	n not l	ated i	n this
chapter	Refer to	the month	y dali is	n the tal	olu of t	ontents for a	Bal	juer tina	hat ng <	f ali i	WEBBILDI	y checi	4 proci	anrei
to be pe	clarmotl -													

(U, Table 4-01 Monthly Power Checks UNCLASSIFIED

Step	Operation	Normal indication	Corrective procedure	
	Perform the	procedures in table 2-1		

c. Table 4.62. Monenly Freshor and arenamatifical in Checks. TTR MTR and TRR

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Step	Opezation	Normal includion	Carrellys procedure
	Perform the	procedures in table 3-1	

(U) Table 4-03 Monthly Leveling Checks-TTR, MTR and TRR

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Step	Operation	Normal or cation	Cortective procedure	
	Perform the	procedures in table 2-3		

(U, Table 4-04 Monthly Presentation Checks-TTR

Step	Operation	Nurmal adjection	Correctlys proordure
	Perform the	procedures in Lable 3-2.	

U. Table 4.1 Monthly Transmitter Checks-TTR

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	the design of the street and the str					
s4eg	14.7 40					
t.	Energize the TTR through low voltage					
	Perform the procedures in table 2-1					
2.	Remove transmitter sync. Out retrack synchron action are market radar control cases of east once it 1212 from Policy of the track synchron action are market radar control cases.					
3.	Apply high voltage to the TTR					
	Or the long total control of works prover rotate the HV SUPFLY Record to SIART and depress the HV SUPPLY—ON switch					
	The HV SUPPLY READY indicator light extinguishes, and the HV SUPPLY-ON indictor light illuminates.					
	Refer to figure 63					
	On the radar power control indicator, the TARGET MIGH VOLTS-PRE- HEAT, HOT, and READY and the TARGET INTLK indicator lights extinguish. The TARGET-HIGH VOLTS-ON indicator light illuminates. Refer to figure 63					
*d.	Check operation of the magnetron are suppressor					
	 on the target track antenna support base, set the ANTENNA switch to DISABLE and the BLOWER switch to OFF 					
	6 On the target track RF control-power supply, connect a voltmeter between terminal 31 and ground					
	The voltmeter indication is between +145 and +155 volts.					
1	Refer to figure 58					
	c. Disconnect the volumeter					
	d Disconnect the lead from the magnetron are suppressor					
	 Momentarily short the center conductor on the arc suppressor lead to ground. To obtain a ground, the arc suppressor lead can be placed on the almement pin located above the upper right swinging thumbnut used to secure to etarget track RF control power supply. 					
	On the radar power control indicator, the TARGET—HIGH VOLTS—ON indicator momentarily extinguishes.					
	Refer to figure 47.					
	f. Reconnect the lead disconnected in d above					
	g Set the BLOWER switch to ON and the ANTENNA's witch to NORMAL					
5.	Check the high voltage circuits.					
	a. Operate the MAGNETRON switch to KV FS=20.					
	h Adjust the HV SUPPLY knob until an indication of 16 κV is noted on the MAGNE- IRON meter.					

Omn this step if the checks in the preceding tables have been performed in sequence

(O) Table 4-1 Monthly Transmitter Checke-TTR-Continued

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Blab	Operation	Normal adduction	Солгеойу» реосвяще				
Б	Continued		and the first section of the section				
	as mercated	Caution. When performing ϵ below, insure that the high voltage power supply current, as indicated by the MAGNETRON meter, does not exceed 5 ma					
	natesy (While monitoring both voltage and current by setting the MAGNETION switch older nately to KV FS=20 and MA FS=100, slowly adjust the LiV St. Pr LY and to obtain an indication of 20 ky or 5 ma, whichever occurs first.					
		A voltage of 20 kv can	be obtained with a current of 5 ma or less.				
			Warning Voltages DANGEROUS TO LIFE exist in the larget track receiver- transmitter. Before performing mainte- nance on the unit, deenergize the system and discharge all capacitors using the shorting bar				
			*Note If exceasive current is noted, the -500-volt (hins) power supply and pulse amplifier VI in the TTR receiver-transmitter should be suspected. The bits voltage can be measured in the low voltage condition. Re- pealing step 5 with the leads to VI discon- nected can isolate VI.				
			Refer to figure 47				
	The current indication remains steady,						
			Refer to figure 47				
6	Deenergize t	Deenergize the transmitter, and restore normal connections					
	a Rotate	a Rotate the HV SUPPLY knob to START and depress the HV SUPPLY OFF switch					
	b. On the	track synchronizer, reconne	ct P212 to J5				
7,	Perform the	weekly transmitter check pr	rocedures in table 3-3				

(U) Table 4-2 Monthly Target AFC Checks TTR UNCLASSIFIED

Step	Open	at on	Nozina ind	gal nn		Correctiv	е плосе	duze			
1.	Pre	pare for th	he target AFC	Cehecks.							
	a,	Perform	the procedu	res in table 2-1	1						
	b	On the SHORT		control-power	supply	set the	TTR	PULSE	HTOIW	sw.tch	to

Omit thus step if the checks in the preceding tables have been performed in sequence

Suep	Operation	Normal institution	Corrective procedure
1.	Contanued		
	c On the t	target antenna contro	group, set the switches as indicated
	Su	itch Setting	
	TEST	TEST	
		JN LOG AGC	
	MULTI	BIN ZERO	
			on.tor verify that the RCVR TEST switch is not set RGET switch is set to TARGET
2.	Energize the	TTR magnetron trans	nitter
	depress the h	IV SUPPLY ON swi	supply rotate the HV SUPPLY knob to START at the Adjust the HV SUPPLY knob to obtain an indic RON meter white block
3,	Check the erg	ystal current and local	osciliator (VTO) output at the monitor panel.
i	a. On the t	target track antenna si	pport base, set the ANTENNA switch to DISABLE

switch until the magnetron tuning drive stops

The relative frequency dial on the magnetron tuning drive indicates on the reference line.

- Remove the flexible cable from the tuning drive.
- (2) Manually tune the magnetron until the magnetron frequency dial reaches the high frequency stop.
- (3) Using the FREQUENCY—DE-CREASE—INCREASE switch and the FREQUENCY TUNE switch, tune the magnetron tuning drive until the relative frequency dial indicates on the reference line
- (4) Replace the flexible cable to the tuning drive
- d. At the target track receiver-transmitter, set the XTAL SEL switch on the monitor pane, to each position from CR1 through CR16

The XTAL CUR meter indicates a steady value between 40 and 100 μa for each position.

Adjust variable attenuator AT7 on the mixer assembly Repeat step d.

The AFC LOCK indicator on the target AFC is illuminated and steady

Perform the procedures in table 5-1

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(U) Table 4-2 Monthly Target AFC Checks-TTR: Continued UNCLASSIFIED

Step	Oper	aişan	Sormal addication	Corrective procedure
3	Con	tinned		
	e.	On the	target track AFC, remove the	coaxial cable from J3-IF IN
			The AFC LOCK indicat	or extinguishes.
				Refer to figure 49
	f	Reconn	ect the coaxial cable removed	I in e above to J3-IF IN
			The AFC LOCK indicat	or is illuminated and steady
				Perform the procedures in table 5-1
	В	Set the	XTAL SEL switch to the pos	ation that exhibits the lowest crystal current
	11			INCREASE switch to DECREASE
	1	Operate stops.	and hold the FREQUENCY	TUNE switch until the magnetron tuning drav
			The XTAL CUR meter	indicates a steady value between 40 and 100 µa
				On the mixer assembly, reset variable attenuator AT7
			The AFC LOCK indicate quency is varied.	or is illuminated and steady as the magnetron fre
				Perform the procedures in table 5-1
ľ	1	If moves	assembly variable attenuator	AT7 was adjusted, repeat d through above
	k	Set the	XTAL SEL switch to METER	OFF
		Set the	BLOWER switch to ON	
	m,	Set the	ANTENNA switch to NORM.	AL
4.	Perfe	orm the o	laily target AFC check proces	dures in table 2-6, steps 3 and 4.

(U) Table 4-3 Monthly Rader Test Set Group Checks UNCLASSIFIED

p	Operation	Hormal arditation	Corrective procedure			
.	Perform the weekly radar test set group checks.					
	Perform the procedures in table 3-4.					
.	Check the CAL ∞ adjustment.					
	a. Set the switches on the radar test set as indicated					
	Swite	h Setting				
	FUNCTI	ON CAL				
	MODE	CW				
	METER	0 dBm				

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(U) Table 4-3. Manthly Rader Test Set Group Checks. Continued

	UNCLASSIFIED						
Surp	Some 10 4 op	Coren we are a same					
2.	Continued						
	b. On the radar test set, set the SIGNAL LEVEL switch to 70						
	The RF POWER dB meter indicate:						
	S. S. Lib. GIGNAY Y. W. W.	Unlock the CAL or control and adjust for or indication on the meter. Relock the control Refer to figure 92					
S.	c. Set the SIGNAL LEVEL sw.tch to 00						
۵.	Determine RF oscillator power output. a Set the switches as indicated						
	Switch Setting PULSE TEST PRIMARY PULSE WIDTH SHORT FREQ SEL TARGET						
	a.1 Perform the procedures in step 25 and c above,						
	b. Observe the RF POWER dB meter indication						
	The moter indication is between 0 a	nd 2 dB.					
		Unlock the OUTPUT control and adjust for a meter indication of 1 dB. Resock the control.					
4.	Date of Director	Refer to figure 92					
2.	Determine RF oscillator tuning range.						
	Note. The tout set should have been on for at least 15 minu	its before this check is parformed					
	c. Set the MEAS FREQ dual to 8,545 MHz						
	The RF POWER dB meter indicates						
		Unlock the OUTPUT control and adjust for a meter indication of 1 dB. Relock the control Refer to figure 92,					
	 b Unlock the TARGET OSC control and slowly sharp dip (greater than 1 db) in the indication on 	rotate counterclocky so to obtain a					
	A dip occurs before the TARGET counterclockwise	C OSC control has been rotated fully					
	c (Deleted)	Refer to figures 92 and 93					
	d. Set the MEAS FREQ dual to 9,600 MHz						

(U) Table 4-3. Monthly Rader Test Set Group Checks Continued

		UNCLASSI	rieb
cep	Опетация	Somnai maical ion	Corrector o procedure
	Continued		ndicates between 0 and 2 dB. Unlock the OUTPUT control and adjust for a meter indication of 1 dB. Relock the control Refer to figure 92
	e Rotate the	on on the RF POWER dB me	kwise to obtain a sharp dip igreater than 1 db in eter
		A dip occurs before the clockwise	TARGET OSC control has been rotated fully Refer to figures 92 and 93
	f (Deleted)		
	Caution To	op when rotating the MEAS	the frequency meter, do not apply excessive force FREQ dian fully clockwise or counterclockwise
	h Rotate the	e MEAS FREQ dial fully coun	terclockwise
5.	meter	nase tests, The OUTPUT control and adjusted to PULSE.	st for an indication of 0 on the RF POWER of
		ETER switch to -10 dBm.	
	Note Wish th	ne METER switch set to ~10 dBn meter This condition is acceptable	n random indications Jess than 0.3 db) may occur on the
	d. Perform	the procedures in step 2b and	c above.
		The indication on the RF	POWER dB meter is between 1.5 and 4.5
			Perform the procedures in tab 5-28, steps 1, 2, 4, and 5, Refer to figure 93
		e OUTPL I contro. for an ind ULSE WIDTH switch to LON	cation of 4 on the RF POWER dB meter.
		the procedures in step 2b and	a above
		The indication on the RF	POWER dB meter is between 2 and 6
			Perform the procedures in tab 5-28, steps 1, 2, and 5 Refer to figure 93
	h Adast th	ne OUTPUT control for an ind	lication of 4 on the RF POWER dB meter
		the PULSE TEST switch to SI	

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(U) Table 4-3 Monthly Radar Test Set Group Checks-Continued

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1			
Simp	Contact to	Notal at ordina ac-	Threat we interest te
_ 1	O		

Perform the procedures in step 2b and c above

The indication on the RF POWER dB meter is between ∞ and 5.

Refer to figure 93

- h. Operate the PULSE TEST switch to SECONDARY HI
- I. Perform the procedures in step 25 and c above

The indication on the RF POWER dB meter is between 3 and 5.

Refer to figure 93

6 Perform the signal level tests,

a. Set the switches as indicated

Switch Setting PULSE WIDTH SHORT METER 0 dB MODE CW

- b. Perform the procedures in step 2b and c above
- Adjust the OUPL I control to get in an indication of 0 on the RF POWER dB meter
- d Set the SIGNAL LEV bassy too so per ordy to at 26, 30, 43, 50, 60, and 70

The indication on the RF POWER dB meter is between and 6 for each switch position.

Refer to figure 93

c. Set the SIGNA. LEVEL switch in secucintial steps from 00 to 05

The indication on the RF POWER dB meter equals the SIGNAL LEVEL switch setting ±1.25 dB.

Refer to figure 93.

- f. Set the METER switch to 5 dBm
- f 1 Perform the procedures in step 25 above.
 - g. Set the SIGNAL LEVEL switch to fif.
 - h Adjust the OUTPUT control to obtain an indication of 0 on the RF POWER 4B meter
 - Set the SIGNAL LEVEL switch in sequential steps from 05 to 09

The indication on the RF POWER dB meter equals 5 +1,25 dB less than the SIGNAL LEVEL switch setting.

Refer to figure 93

Check RF power flatness between 8,545 and 9,600 MHz.

Nate. The test set should have been on for at least 15 minutes before this check is performed

- a. Set the METER switch to 0 dBm
- b. Perform the procedures in step 2b and c above

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tU Table 4-3 Monthly Rodar Test Set Group Checks-Continued

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3814	station Storonic in Sept	(Self)	extraction products		
Co	ntmued				
ø	Verify that the FEF2 OSC control is set to 4:		TARGET position and the TARGE		
a	Acjest he Octob for Look the OUTPUT con		f 15 on the Rr POWER dB meta		
ø,	Set the MEAS FREQ di	ial to 8,545			
f	Slowly rotate the TARCETOSC control to interconcurse to obtain a sharp dry great than 1 are in the indication on the REPOWER dB invar. Record the setting of the TARGET OSC control.				
g	Set the MEAS FREQ di	na. to 9,600			
h	Slowly relate the FARCET OSC cours, closures to obtain a sturp dip (greater that a lab) in the indication on the REPOWER AB mater. Record the setting of the FARCE OSC control.				
ì.	Rotate the MEAS FRE	Q d.a. fully clockwise			
f	and the second s				
		ation on the RF FOWFR of the TARGET OSC contro	dB meter is between 0 and 3 for ol,		
			Refer to figure 93.		
h.	Set the TARGET OSC	control to 4,5 and lock the	control		
Ch	eck the MISSILE OSC fr	reenveney			
			s before this check is performed		
		s are in the indicated position			
ÇII	•	· ·	O-IN.		
	Switch	Setting			
	AC POWER FUNCTION	ON CAL			
	MODE	CW			
	SIGNAL LEVEL	00			
	FREQ SEL	MISSILE			
ь.	Perform the procedures	s in step 2b and c above.			
	The RF PC	DWER dB meter indicates b	etween 0 and 2.		
			Unlock the OUTPUT contant and adjust for a meter indicate		
			of 1, Re.ock the control,		
1	Nate Verify that the MEAS	FREQ dial ,s not set to oscillato	of 1, Relock the control,		
l c			of 1. Relock the control.		

(U) Table 4-3, Monthly Roder Test Set Group Checks-Continued

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5504	Egeza ent	No mai and a se-	rice est estate
6.	Continued		
		The indication on the \	dEAS FRE Edul is within 1 r MHz of the assigned.

missile beacon frequency or assigned MTR receiver operating frequency

Adjust the MEAS FREQ meter dial to the desired frequency Unlock the MISSILE OSC frequency control and slowly adjust the control to obtain a dip in the meter indication. Relock the controt

₽. Check the TARGET OSC frequency.

And The escapt great has expension to a least a morale medite in a characteristic

a. Verify that the switches are in the indicated positions.

Switch Setting AC POWER ON FUNCTION CAL MODE CW. SIGNAL LEVEL ann. FREQ SEL TARGET

b. Perform the procedures in step 2b and c above.

The RF POWER dB meter indicates between 0 and 2.

Unlock the OUTPUT control and adjust for a meter indication of 1 Relock the control

Note. Verify that the MEAS PREQ dia sino secto the occupator frequency

c. Slowly rotate the MEAS FREQ meter dial until a sharp day (greater than 1 dl. is) served in the RF POWER dB meter indication,

> The indication on the MEAS FREQ dial is within 15 MHz of the assigned TTR receiver operating frequency,

> > Adjust the MEAS FREQ dial to the desired frequency Unlock the TARGET OSC frequency control and slowly adjust the control to obtain a dip in the meter indication, Relock the control

Note. If no receiver operating frequency is assigned use 9 000 MHz as the osc, mor frequency

d. Rotate the MEAS FREQ meter dial fully clockwise

Check the power output calibration.

10.

c. Perform the CAL ... procedures in step 2 above.

(U) Table 43. Monthly Radar Test Set Group Checks-Continued

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A 022	Policial William Society and Control of Control	Control with
10.	to Venfy that he [ARGE] OSC controls so per step 9 above	er to the desire. Like operators freen nev
	The RF POWER dB meter indica	ation is between 0.5 and 1.5
	•••	Unlock the OLTPUT control and adjust for a meter indica- tion of 1 Relock the OUTPUT control
		Refer to figure 92
	c. Venfy that the OUTPUT control is locked	
11.	Condition the radar test set for remote operation	h.
	g. Set the FUNCTION switch to RMT	
	b Insure that the ME AS FREQ control has been	n rotated fully Gockwise

(U) Table 4-4. Montaly Beacon AFC Checks-TTR

Operation Normal indic	stion	Corrective procedure
		MTR and TTR antennas are not simultaneously
Prepare for the beacon AF	C checks,	
a. Perform the procedure	s in table 2-1.1	
b On the target antenna	control group, set the	switches as indicated
TEST	TEST	
c. On the target test cont	rol, set the switches as	andicated.
Switch SIGNAL LEVEL FREQ SELECT MODE	Setting 00 LOCAL CW	
Adjust the FREQUEN	CY control dial to 500	0
d On the target track co.	ntre i power supply, se	t the switches as no cated
Switch AGC-MANUAL TTR PULSE WIDTH	Setting AGC LONG	
	A o'e To min mar RF and aimed at the radar test set mass Prepare for the beacon AF a. Perform the procedure b On the target antenna Switch Switch TEST MULTI BIN c. On the target test cont Switch SIGNAL LEVEL FREQ SELECT MODE Adjust the FREQUEN d On the target track co Switch AGC—MANUAL	Anic To min mize RF interference matter hat the aimed at the radar test set mast or other common object. Prepare for the beacon AFC checks, a. Perform the procedures in table 2-1.1 b. On the target antenna control, group set the Switch Setting. TEST TEST MULTIBIN OFF. c. On the target test control, set the switches as Switch Setting. SIGNAL LEVEL 00. FREQ SELECT LOCAL, MODE CW. Adjust the FREQUENCY control dial to 500 d. On the target track control, power supply, see Switch Setting. Switch Setting.

Omit ship step if the checks in the preceding tables have been performed in sequence

(U) Table 4-4. Monthly Beacon AFC Checks-TTB-Continued

Step	Ореги	ion Normal indicas	ion	Corrective procedure		
1.	Cont	mued				
	e	On the target error volta	age monitor, set the	switches as indicated		
		Switch	Setting			
		(IF TEST) ADJ	ADJ			
		RCVR TEST BEACON-TARGET	BLAS BEACON			
		PRESET	2			
	6	Momentarily operate th	e SWEEP PRESET	switch.		
		The SWP C	ENTER indicator is	illuminated,		
				Refer to figure 50.		
	g.	g. On the target IF test generator, set the switches as indicated				
		Switch	Setting			
		OSC	ON			
		MODE	CW			
		PULSE WIDTH 090 dB ATTENUATO	SHORT R 30			
		0-90 db attenuator				
		On the missile control- SILE switch is set to ST		rnfy that the TARGET-STANDBY	MIS-	
2.	Set fi	requency of the IF test (generator to system	IF frequency,		
	G.	On the IF test generator	, set the COARSE I	F FREQ ADJUST control to 0		
	ь.			the target error voltage monitor, adju	ist lne	

- the PINE IF FREO ADJUST control to obtain a maximum indication
 - Set the OSC switch to OFF
- 3. Check discriminator output due to receiver noise.
 - Set the TTR PULSE WIDTH switch to SHORT
 - On the target error voltage monitor, set the RCVR TEST switch to AFC

Note. The meter indication in 5 and c below should be observed for at least 15 seconds.

The RCVR TEST meter average indication is approximately 50.

- (1) On the TTR beacon AFC, adjust the NOISE BAL control
- (2) Perform the procedures in table 5-2,

(U) Table 4-4. Monthly Beacon AFC Checks-TTR-Continued

Stop	Орахалийн	Normai indication	Con	sective bro-sequite			
3.	Continued						
	c Set th		DTH switch to LONG	Operate and hold the AFC SENS			
		The RCVR T	EST meter average indi	cation is approximately 50.			
			(1)	On the TTR beacon AFC, adjust the FREQ TRIM control			
			(2)	Perform the procedures in table 5-2			
	d. Releas	e the AFC SENS sw	itch.				
4.	Check the d	liscriminator output	slope.				
	a On the	target IF test gener	rator, set the OSC switch	th to ON			
	b. Set the	TTR PULSE WID	I'H switch to SHORT.				
		The RCVR T	EST meter indicates 50).			
				the target IF test generator, adjust FINE IF FREQ ADJUST control			
	e Set the	COARSE IF FRE	ADJUST control to	1,			
		The RCVR T	EST meter indicates be	etween 65 and 80.			
			Per	rform the procedures in table 5-2.			
	d Note t	he indication on the	RCVR TEST meter				
	e Set the						
	f. Subtra	ct the indication no	ted in c above from 10	0			
		The RCVR T	EST meter indicates wi	thin 10 of the computed number,			
			Per	rform the procedures in table 5-2,			
	g On the	e target IF test gene	rator, set the switches:	as indicated			
		Switch	Setting				
	osc	DW11616	OFF				
		dB ATTENUATOR					
	Set the	COARSE IF FRE	Q ADJUST control to ().			
5.	1	eacon AFC loop ga	*				
	T	e RCVR TEST swite					
				g the procedures in table 2-7, step 2			
	through		i m , using the PRESE	2 contro. instead of the PRESET			

(U, Table 4.4 Monthly Beacon AFC Chacks-TTR-Continued

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Step	Operation	Normal indication	Corrective procedure	
5.	Continued			
			oltage monitor RCVR TEST meter adjust test control to obtain an indication of 80	the
		The FREQUENCY conf	rol dini indicates between 260 and 420.	
			Perform the procedures in table 5-2	
	d Adjust meter,	the FREQUENCY control to	obtain an adjection of 20 on the RCVR T	rest
		The FREQUENCY conf	gol dial indicates between 580 and 740.	
			Perform the procedures in table 5-2	
6	Perform the	daily beacon AFC check prod	edures in table 2-7.	

(U) Table 4.5 Monthly In System AGC Gate and Range Notch Adjustments—TTR and MTR UNCLASSIFIED

Step	Ope	ration Normal md/p	ation	Corrective procedure			
1,	Prepare for the TTR checks.						
	a.	Perform the procedures in table 2 1 '					
	b.	On the target antenna	control group, set th	e sw.tches as indicated			
		Switch	Setting				
		TEST	TEST				
		AGC-LIN-LOG	AGC				
		MULTI BEN	ZERO				
	c	c On the target track contror-power supply, set the switches as indicated					
		Switch	Setting				
		AGC-MANUAL	AGC				
		TTR PULSE WIDTH	SHORT				
		IND	R				
	d.	On the target error voltage monitor, verify that the BEACON-TARGET switch is set to TARGET					
	ė.	On the target track control-power supply, rotate the HV SUPPLY knob to START and depress the HV SUPPLY ON switch Adjust the HV SUPPLY knob to obtain an indication in the center of the MAGNETRON meter white block					
2.	Pre	pare for the MTR checks					

a. Perform the procedures in table 2-1 1

Omli this step if the checks in the proceding tables have been performed in sequence.

(L) Table 18 Monthly in System AGC Gate and Range Notch Adjustments-TTR and MTR. Continued

UNCLASSIFIED

Step	Opein	(for	Vorma, indication	Connect	ive procedure		
2.		anued	e track contro. drawer,	eat the switcher	s as indicated		
	b			3C1 9110 011344114			
		Switch	Setting				
		DISABLE	TEST				
		RANGE	ZERO				
	с	set to AGC			that the AGC-MANUAL switch is		
	d	On the error	voltage monitor, set the	BEACON-TA	RGET switch to TARGET		
	e	and depress	le track control power the HV SUPPLY—ON s AGNETRON meter	supply, rotate witch Adjust	the HV SUPPLY knob to START the HV SUPPLY knob to obtain 3		
3.	Che		nd TTR AGC gate cente				
	a	Rotate the n	inge handwhee, to cente	er the range gut	e on the 10th range zero pulse		
	b	While observing the range indicator, very slowly rotate the range handwhee, to obtain minimum amplitude of the range zero pulses.					
	c.	Note the ran	ge indication.		A CONTRACTOR OF THE PARTY OF TH		
	d.	AID-AUTO switch to AUTO					
			The range indication is		s of the range noted in c above.		
				for a zero MAN	the RSPU, slowly adjust A31 R4 minimum amplitude of the range pulses. Set the range switch to N. Perform the procedures in table Repeat a through d above.		
					Refer to figure 20 (MTR) or 62 (TTR).		
4.	Che	ck the TTR a	ort pulse and MTR ran	ge notch width	4		
	a.		e awitch to MAN.				
	ь						
		The selected range zero pulse just fits within the range notch.					
				(1)	On the RSPU, adjust A31 R2 clock- wise until the depth of the notch starts to decrease. Then adjust R2 counterclockwise until the depth just stops increasing.		
					Perform the procedures in table		

5-14 for the appropriate radar

(U) Table 4 h. Monthly In System AGC Gots and Range Notch Adjustments-TTR and MTR. Continued UNCLASSIFIED

\$14p	Орин	ation Normal indication	Charentive procedure
4.	Con	tinued	
			(3) Perform the procedures in table 5-8 (TTR) or 5-17 (MTR) to establish the initial pulse widths and delays Repeat step 4.
5,	Che	ck the TTR short pulse and MTR rang	e notch centering.
	а. Ь,	Rotate the range handwheel to place Set the range switch to AUTO	the selected range zero pulse in the range notch
		The negative portions o are equal in amplitude	f the range zero pulse centered in the range notch
			(1) On the RSPU, adjust A81 R1 as required
			(2) Set the range switch to MAN and perform the procedures in table 5-8 (TTR) or 5-17 (MTR) to estab- hab the initial pulse widths and de- lays. Repeat stops 4 and 6 abovs.
	c.	Set the range switch to MAN	
6.	Che	ck the TTR long pulse range notch wi	ith.
	e.	On the target track control-power LONG	supply, set the TTR PULSE WIDTH switch to
	b.		variable resistor R8 on A31 as required. If the nt, leave R8 set for the narrowest range notch
7,	Che	ck the TTR long pulse range notch po	sition.
	Rep	eat step be through c above. Adjust v	ariable resistor R9 on A31 as required
8,	Esta	ablish the TTR operational status.	
	Ø.	On the target track control-power and depress the HV SUPPLY—OFF a	supply, rotate the HV SUPPLY knob to START witch.
	b.	On the target antenna control group,	set the MULTI BIN switch to OFF
9.	Esta	ablish the MTR operational status.	
	a	On the missile track control-power and depress the HV SUPPLY—OFF a	supply, rotate the HV SUPPLY knob to START witch.
	b.	On the missile error voltage monitor	set the BEACON—TARGET switch to BEACON
	C.	On the missile track control drawer,	set the RANGE switch to NORMAL

14. Table 4-5 1 Monthly RSPU Checks-TTR and MTR

UNCLASSIFIED

Step	Chick ton	Normal outra ion	Corrective place day	
	Perform the	procedures in table 3-5,	<u> </u>	

(U, Table 4.5.2 Monthly Ronge System Checks-TTR

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Simp	(persuon	No one indication	() are procedure
		procedures in table 2-8	

Table 4-6 Monthly Monopular Receiver Checke-TTR

JNCLASSIFIED

jtep	Opera 1	on Normal Indicates	n Corrective procedure
		To minimize RF Interfere	nce make that the MTR and TTR antennas are not abundanceously ther common object
1	Prepa	re for the monopulse rec	eiver checks,
	a.	Perform the procedures is	table 2-1
	t	On the target antenna co	trol group, set the switches as indicated
		Switch TEST MULTI BIN RANGE TRACK AGC—LIN-LOG On the target test contro Switch	Setting TEST OFF TTR AGC i, set the switches as indicated Setting
		SIGNAL LEVEL FREQ SELECT MODE PULSES On the target track contr	00 REMOTE PULSE SINGLE ol-power supply, set the switches as indicated
		Switch	Setting
		-	**************************************
		AGC-MANUAL TTR PULSE WIDTH IND	AGC LONG R

Omit this step if the checks in the preceding tables have been performed in sequence

(U) Table 4.6 Monthly Monopulse Receiver Checks-TTR-Continued

Hea	ation Normal process	on Corrective programm				
Cor	stanued					
£*	On the target error vo.	ge monitor, set the switches as indicated				
	Switch	Setting				
	(IF TEST)—ADJ	ADJ				
	RCVR TEST BEACON-TARGET	BIAS BEACON				
	PRESET	1				
	NOW CITA	SUM				
l f	On the target error vo.	ge monitor momentarily operate the SWEEP PRESET switch				
		ENTER indicator is filuminated.				
		Refer to Egure 50				
g	On the maste contro SILE switch is set to S	ndicator group, verify that the TARGET-STANDBY-M15-ANDBY				
-L	On the IF test generate	, verify that the OSC switch is set to OFF				
	We be For the commoder of the table α , awatches and me ers are located on the torge-error volumentor unless otherwise indicated					
	eck the gain setting of th					
1	The average AGC bias indication is between 0 and 10.					
		(1) On the target sum main IF amplifier, adjust the GAIN ADJ control to obtain an average indication of 5 on the meter.				
		(2) Perform the procedures in table 5-3				
Ch	eck the AGC level setting	,-,				
a,	On the TTR IF test ge	erator, set the switches as indicated				
	Switch	Setting				
	OSC	ON				
	MODE	CW				
	SLEW RATE	OFF				
	0-90 dB ATTENUAT 0-9 dB ATTENUATO					
	PULSE WIDTH	LONG				
b.		or, adjust the FINE and COARSE IF FREQ ADJUST controls 1 on the RCVR TEST meter,				

(U) Table 4-6. Monthly Monopulse Receiver Checks-TTR: Continued

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Oper	net a	5, rmar no lador	(- treative procedure
Cor	ntinued		
		The RCVR TEST meter	indicates between 45 and 55
			On the target IF distribution and AGG control, adjust the AGC ADJ control to obtain an indication of 50 on the meter
			Refer to figure 48
Che	eck the AC	GC response	
а		IF test generator, vary the to 50 dB	0-90 dB ATTENUATOR switch in 10-db step
		The RCVR TEST meter	indicates between 45 and 55
			Refer to figure 48
ь	Vary the	e 0-90 dB ATTENL ATOR s	witch in 10-dh steps from 50 to 90 dB
		The RCVR TEST meter	average indication is between 40 and 60
			Refer to figure 48
Che	eck the su	m video gam.	
а	On the tarily de	IF test generator, set the 0- press the RANGE PRE-SET	90 dB ATTENUATOR switch to 0 dB Mome switch Set the MODE switch to PLLSE
b	Set the		test pulse adjacent to the range notch. Note t
c		IF test generator, use the RA otch to obtain minimum puls	NGE TRIM control to center the test pulse in the amplitude.
			elative to the sweep baseline is between one-thi slittide noted in b above
			Perform the procedures in table 5- step 5
			Refer to figure 48
đ.	On the	IF test generator, set the MO	DE switch to CW
Ch	eck gain v	anation between the IF amp	bfiers.
		aly gain variations are que to co- in table 5-8	mpensations made for gain variations in the receiver ${ m RF}$
а		IF test generator, verify that UATOR switch to 30 dB	the OSC switch is set to ON and set the 0-90 o
b.	Set the	RCVR TEST switch to (AZ)	
		The RCVR TEST mete	r indicates between 30 and 80
			Set the IF test generator OSC switch OFF, and perform the procedures table 5-3, step 7. Set the OSC switch

to ON Repeat step 1g above

U, Table 4-8, Monthly Monopulae Receiver Checks-TTR: Continued

			OlfoEno			
Step	Ope	ration	Normal (no caulon	Corrective proceedure		
6.	Co	ntinued				
	C,	Set the	RCVR TEST switch to (EL)			
			The RCVR TEST mete	r indicates between 30 and 80.		
				Set the IF test generator OSC switch to OFF, and perform the procedures in table 5-3, step 7. Set the OSC switch to ON. Repeat step 1g above		
	đ.	On the	IF test generator, set the OS	C switch to OFF		
1	e	Set the	RCVR TEST switch to BIAS	and the (IF TEST) ADJ switch to ADJ		
7.	Check the operation of the pre-attenuator					
	a.	On the	target error voltage monitor	, set the BEACON TARGET switch to TARGET		
	b.		target error voltage monito	r, hold the REMOTE-LOCAL switch in LOCAL maximum clockwise		
	c			eter, slowly adjust the MAN GAIN control counter. The pre-attenuator operating is heard.		
			The RCVR test meter i	ndicates between 50 and 75.		
				Refer to figure 48		
	d.			neter, slowly adjust the MAN GAIN control clock ore attenuator deenergizing is heard		

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(U) Table 4-8. Monthly Monopulse Receiver Checks-TTR: Continued

#D	Opera	don	Normal indication	Corrective procedure	
7	Cont	anued			
			The RCVR TEST meter	r indicates between 20 and 45,	
				Refer to figure 48	
	6.	Release the	REMOTE-LOCAL swit	ch,	
	1	Set the BE	ACON-TARGET switch	to BEACON.	
8.	Chec	k the target	signal strength meter.		
	a.		EMOTE-LOCAL switch indication of 10 on the RO	in LOCAL, and adjust the MAN GAIN control to TEST meter.	
			The TARGET SIGNAL sole indicates between	L STRENGTH meter on the target tracking con 5 and 15.	
				Refer to figure 48	
	Not	e. Each majo	z meter division equals appro	ximitally 10 db	
	ь	Adjust the meter	MAN GAIN control to	obtain an indication of 90 on the RCVR TES	
			The TARGET SIGNAL sole indicates between	L STRENGTH meter on the target tracking co 86 and 95.	
				Refer to figure 48	
	C.	Release the	REMOTE-LOCAL swit	ch	
9.	Chec	k the sum,	azimuth, and elevation ch	annel receiver senativity.	
	a.	On the tax	get truck control-power	supply, set the TTR PULSE WIDTH switch	
	b.	Perform th	e procedures in table 2-7	, steps 2 and 3 and table 2.9, steps 4b through	
	The sum SIGNAL LEVEL switch indication obtained in table 2-9, step fic does not exceed the last computed TTR receiver sensitivity figure by more than 5 db.				
				Perform the procedures in table 5-4 obtain a new computed TTR receiv sensitivity figure.	
	c	Remove the	e coaxial cable from CP1	-A T VIDEO TEST and the VID MON coaxial , ac	
	ď.			JLSES switch to SINGLE	
	e,	On the test	adapter, set the AMP Of	I—OFF switch to OFF.	
	1.	Set the TE	ST IND (S23) switch to ()FF	
).	Chec	k the receiv	er overload circuit opera	tion,	
	a	On the targ	et test control, set the SI	GNAL LEVEL switch to 20	
			The radar signal is stabl	e and centered in the range notch	
			_	Reacquire the radar test set using the procedures in table 2-7, step 2,	

(U) Table 4-6. Monthly Manapulse Receiver Checks-TTR-Continued

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Step	-Ope	ntlos	Normal inducation	Convective procedure
10.	Cor	ıtinued		
	b			tROR and EL ANGLE ERROR meters, position an indication of approximately +5 mils on each
	с	Note the	andication on the target trace	k control console TARGET SIGNAL STRENGTH
	d	and adju	ist the receiver GAIN contri	pply, set the AGC—MANUAL switch to MANUAL of for the same meter indication noted in c above
	e	On the t	arget test control, set the SI	
			The AZ ANGLE ERRO +3 mils or greater.	OR and EL ANGLE ERROR meters still indicate
				Perform the procedures in table 6-5
	7	Set the S	SIGNAL LEVEL switch to 0	8.
			The AZ ANGLE ERI approximately 0 mils.	tOR and EL ANGLE ERROR meters indicate
				Perform the procedures in table 5-5.
11.	Rec	establish th	ne switch positions,	
	φ.	On the t	arget test control, set the SI	GNAL LEVEL switch to 70
	ь			p, set the range MAN ACQUIRE AID-TRACK the MULTI BIN switch to OFF
	C	On the t	target error voltage monitor,	set the BEACON-TARGET switch to TARGET
	đ		missile antenna control indi itch to STANDBY	cator group, set the TARGET-STANDBY MIS
	C	On the t	arget track control-power su	pply, set the AGC MANUAL switch to AGC,

(U) Table 4.7 Monthly High Power Servo Amplifier Checks-TTR, MTR, and TRR

Step	Ope	71.Lion	Normal inducation	Corrective procedure
1.	Pre	pare for t	he high power servo amplifi	er (HPSA) checks,
	Œ,	Perform	the procedures in table 2-1	,t
	b.		missile radar control console switches to MAN	, set the azimuth, elevation, and range MAN-AID-
	c		s to MAN Set the range M	set the azimuth and elevation MAN—AID—AUTO AN ACQUIRE AID—TRACK AID—AUTO switch
		ofe. This p	rocedure is the same for the TT	$R_{\star}MTR_{\star}$ and TRR_{\star} using the controls and indicators peculiar

 $^{^{1}\}mathrm{Q}$ must this step if the checks in the preceding tables have been performed in sequence.

(b) Table 17 Monthly High Power Serva Amphifier Checks-TTR MTR and TRR Con mee-

		UNC	LASSIFIED						
Step	Operation	Jornal Judication	Corrective	procedure					
2,	Perform the HPSA checks.								
	 Pull out the upper left sliding frame of the azimuth drive equipment enclosure on the antenna support base 								
	Caution Connect the multimeter leads after operating the HP AZ AMP BAL switch b and f below.								
	b. Operate a								
	AZ1 and	AZI and NEUT test points.							
		ft HPSA adjust the line multimeter	BALANCE variable resi	stor to ob	la.n a mi	minum indic			
		The multimeter is	ndicates less than 4 volt	Ja.					
			R	efer to fig	rure 18 (l	MTR)			
				efer to fig					
			R	efer to fig	ture 76 (1	TRR)			
		Caution Remove the multimeter leads before releasing the HP AZ AMP BAL switch is and hipslow.							
	e Disconne	THE APP AND DATE OF THE PART AND DATE OF THE PART OF T							
	f Operate								
		and the state of t							
	The multimeter indicates loss than 4 volts.								
			R	efer to fu	gure 18 (MTR).			
			R	lefer to fig	gure 53 (TTR)			
			F	lefer to fi	gure 76 (TRR)			
	h, Disconne	ct the multimeter an	d then release the HP /	Z AMP E	AL swite	ch.			
		through h above for peculiar to each	r the shding frame and	HPSA in	idicated l	below using t			
		HP AMP	BAL	Re	fer to figi	ure			
	Strate	e/HPSA Switch	Test points	MTR	TTR	TRR			
	Center/	left AZ	AZ3 and NEUT	18	53	76			
	Center/		AZ4 and NEUT	18	53	76			
		left/left EL	EL1 and NEUT	19	54	77			
		left/right EL	EL2 and NEUT	19	54	77			
		right/left EL	EL3 and NEUT	19	54	77			
	Bottom	right/right EL	EL4 and NEUT	19	54	77			

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tl.) Table 4-8. Monthly Trucking Servo Checks. TTR

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Step	Operation	Normai, Indication	Corrective procedure
ı		n the procedures in table 3.6. I in sequence, orbit step 2 of tab	If the checks in the preceding tables have been per- ble 3-6.
	\ e	In he of wag veps when a splay	control of a city in a series of the galletin being supported.
2.	Perform	n the range servo balance check	
		n the target anternal entrolig ID: AUTO switch to MAN	man set the range MAN Acad Heb Acad TRAS K
	b. 0	bserve the range displays on the	target range indicator
		The range displays a	re stationary
			On the range handwheel drive control adjust the BAL variable resistor Refer to figure 52
3	Perfore	n the range bandwheel calibrati	on in the short pulse mode
		the target track control poy HORT,	ger supply set to a fix Pois Show D.H., switch to
	b. Se	et the TTR range to 20,000 yard	ds
	e. R	otate the range handwheel clock	kwise 10 turns
		The TTR range andic	ation is between 21,450 and 22,050 yards
			Perform the procedures in table 6-3, step 4d
4	Perform	n the range handwhee, calibrati	on in the long pulse mode
	n Si	et the TTR PULSE WIDTH swit	ich to LONG
	b. Se	et the TTR range to 20,000 yas	ds
	c. R	otate the range handwheel cloci	kwise 10 turns
		The LTR range indic	ration is between 27,000 and 28,000 yards
			Perform the procedures in table 6-3, step 4e
5.	Perform	n the azimuth servo balance che	ecks.
		n the target antenna control g	$rou_{\rm P}$, set the azi noth MAN AID: AUTO switch to
		The azumuth display	s are stationary.
			On the execution bandwheel drive can-

On the azimuth handwheel drive control, adjust the BAL variable resistor If the BAL, adjustment range is insufficient, connect a test lead from term nal 7 of the azimuth handwhee, drive motor tach to ground. Adjust R.27, BAL 2, in the target antenna control group to stop the displays. Remove the test lead and repeat step 5.

(U) Table 4-8. Monthly Tracking Serva Checke-TTR-Continued CONFIDENTIAL

Step	Operation	Normal indication	Corrective procedure
5.	Continued Note Do no	t move the azimuth handwheel in	b and c below
		azimuth MAN-AID-AUTO	
	D Devente	The azimuth displays ar	
			On the azimuth handwheel drive con- trol, adjust the R3 variable resistor mounting bracket.
	c Set the	samuth MAN AID-AI'TO	switch to MAN, then to AID and back to MAN
	c Sertife	The azimuth displays re	
		The best state of the state of	Repeat the procedures in a through c above
6.	Perform the	elevation servo balance check	45
	Note Verity	that the TTR antenna elevation	a between 0 and 3,200 mile.
		target antenna control grots set to MAN	up, verify that the elevation MAN AID-AUTO
		The elevation duplays	me stationary.
			On the elevation handwheel drive con- trol, adjust the BAL variable resistor.
	Note, Do no	t move the clavation handwheel i	n b and c below
	b. Set the	elevation MAN-AID-AUT	D switch to AID.
		The elevation displays	are stationary.
			On the elevation handwheel drive con- trol, adjust the R3 variable resistor mounting bracket
	c Set the	elevation MAN-AID-AUT	O switch to MAN, then to AID and back to MAN.
		The elevation displays	
		, — — — — <u>, — — , — , — , — , — , — , —</u>	Repeat the procedures in a through cabove.
7.	Perform the	range servo aided rate check.	
	a. Set the	TTR range to approximately TTR RSPU COORD SELEC	y 100,000 yards.
			nd one-half turns counterclockwise
		_	D DISPLAY indicates between -1,656 and -2,328
			Set the range MAN ACQUIRE AID— TRACK AID—AUTO switch to MAN Set the TTR RSPU COORD SELECT switch to D-FCN. Perform the procedures in table 6-3, step 4e. Repeat the procedures in a through d above.

(U) Table 4-8. Monthly Tracking Serva Checks—TTR—Continued

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		COMFIDE	NIIAL
reli	Operation	Novir id addression	Carrecyles procedure
7.	Continued		
	e Set the M	IAN ACQUIREAID TRA	ACK AID- AUTO switch to TRACK AID
		The PTR RSPU COOR	D DISPLAY indication is within 25 of the indica
			Refer to figure 54.4
	f Set the re	ange MAN ACQUIRE AID	-TRACK AID- AUTO swatch to MAN
.	Perform the az	zimuth servo rate checks.	
	a. Position (the TTR antenna elevation	to 0 mila.
		TR range to 1,500 yards.	
			SELECT switch to Y-RATE
	d. Set the a	zimuth MAN AID-AUTO	switch to AID
	e Rotate .h	ie azimuth handwhee, six t	urns clockwise or counterclockwise.
			TTR RSPU COORD DISPLAY varies. The max cumum positive indications are both between 60
			On the azimuth coupling resistor esser bly, adjust the AZIMUTH -AID variab resistor.
1	MAN A		o, set the SERVOS switch to INC and the azimu O Walt approximately 30 seconds until the ante
			TTR RSPU COORD DISPLAY varies. The max timum positive indications are both between 98 l.
			On the azimuth coupling resistor asser bly, adjust the AZIMUTH -AUTO va able resistor. After each adjustmer allow the interna rate to become stead Refer to figure 53.
- 1	g Set the NORMA		O switch to MAN and the SERVOS switch
. :	Perform the el	evation servo rate checks.	
	a. Verify th	at the TTR range is set to 1	.500 vards.
		-	otain a TTR azimuth indication of 0 mils
			position the TTR antenna elevation to 0 mils
1	d On the ta	*	istor assembly, depress and hold the ELEVATIO
- 1	e. Set the e wheel six	elevation MAN AID—AUI turns clockwise.	O switch to AID, and rotate the elevation han
	Cantion Se	t the elevation MAN-AID	-AUTO switch to MAN before the TTR anten

reaches 3,200 mils.

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(U, Table 4-8 Monthly Tracking Serve Checks-TTR Continued

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Step	Operation	Normal indication	Corrective procedure				
9.	Continued						
-		f While carefully observing the TTR RSPU COORD DISPLAY, release the ELEVATION PRE AMP switch					
	The first maximum TTR RSPU COORD DISPLAY indication occurred and -648 yards/second. The maximum indication occurred selevation						
			On the elevation coupling resisted assembly, adjust the ELEVATION AID variable resistor. Set the elevation MAN-AID AUTO switch to MAN and repeat c through f above				
	g. Set the	elevation MAN AID-AUTO	O switch to MAN				
	h Rotate	the elevation handwheel to p	ossition the TTR antenna elevation to 0 mils				
	I. Depress and hold the ELEVATION PRE AMP BAL switch						
			TO switch to AUTO and the SERVOS switch				
	Caution Set the elevation MAN AID—AUTO switch to MAN before the TTR antenni reaches 3,200 mils.						
	k After a	pproximately 30 seconds and release the ELEVATION PR	i while carefully observing the RSPU COORD DI E AMP BAL switch				
		The first maximum TI -984 and -1,080.	TR RSPU COORD DISPLAY indication is between				
			On the elevation coupling resists assembly, adjust the ELEVATION AUTO variable resistor Set the elevation MAN AID—AUTO switch MAN, and repeat h through k above				
			Refer to figure 54				
	s Set the		TO switch to MAN and the SERVOS switch				
	m. Set the	TTR RSPU COORD SELEC	CT switch to D-FCN				

(U) Table 4-9 Monthly Telescope Checks-TTR, MTR, and TRR UNCLASSIFIED

Step	Operation	Normal indication	Corrective procedure	
1,	Perform the p	procedures in table 2-1,1		

Omit this step if the checks in the preceding tables have been performed in sequence.

(U) Table 4.9. Monthly Telescope Checks—TTR, MTR, and TRR -Continued
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Pp- a	Some way the second of the sec
Perf	orm the sighting telescope relicle check on the TTR and MTR
а	$c(n) \to MLR$ and $c(R)$ and $c(na)se$ portibases set the ANTENNA's will have to $c(n)$ ABLE.
L a J	Connect the local antenna controls
	from that the Ambooks are can accome the sight ig to escopes in the reversion
	Recover the tecopie as asserving them the space parts about and estate the mounting brackets in the two rear holes on the telescope mount
7	Instal the retice even targets on the man trug brackets to face in the same direct as the telescope in b above
l e	Adjust the eyellores of the telescopes so that the crosspairs are in searp focus
e I	Set the ANTENNA switches to NORMAL
1	Using the coacante accontrol allege the antenna in elevation
R	Position both antion as a math and electron so that the optical lines of significances the center of the reticle level targets
h	Accept the four six con antil the retice level target is in sharp focus
	ze Mihale po igminig i o lagh mi menow ib incluan enducinitia in e lahe lantendak ema onazy
r	Positive a term and 11 the these oper crosshairs are rentered on the return comparable to the horizontal target runnys.
j j	Rotate the sight of telescope 180 legrees about its optical axis, and observe the direction the conzontal cressinar moves or ative to the horizontal target rulings
Ne.	te. Return the telescope to its original position, level vial down
k	If the relative direction of the telescope crosshair was apward, position the antenso that the store obtail telescope moshair is parallel to the horizontal target runnal above the lower ruling a distance equal to the width of the crosshair of the related level target.
1	If the relative direction of the telescope crosshair was downward position the anterna so that the horizontal telescope crosshair is parallel to the horizontal target ruling and below the upper ruling a distance equal to the width of the crosshair of the reticle level target.
121	Rotate the sighting telescope 180 degrees about its optical axis
	The separation of the horizontal crossbair below the upper ruling above the lower ruling is at least the width of the crossbair
	Replace the telescope.
n	Repeat the procedures m, through m above for the vertual crosshar using the vitical rulings on the reticle level target.
a,	Perform the procedures in a through a above for the other antenna

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Step	00%	assi h	Normal polines on	Listrècia e provindure			
3.	Perform the return level check.						
	a		he local antenna control pos d on a well-defined line or po	Stron the antenna until the horizontal crosshalr a int target			
	b	Withou	t Changing the antenna eleva- ital crosshair traverses the tarp	tion position the antenna in azimuth so that the get			
			The horizontal reticle de	oes not deviate from the point selected			
				Loosen the locknut, and on the telescope mount, adjust the reticle leve, adjustment			
4	Perform the sighting telescope reticle check on the TRR						
	a	a On the TRR antenna support base, set the ANTENNA switch to DISABLE					
	a. I	d. I Connect the antenna test set, and set the CONTROL switch to ANT					
	a. 2,	Set the	ANTENNA switch to NORM	AL			
	b.	Perform	the procedures in step 25 t R with the TRR plunged in el-	brough σ above, using the reticle level target of evation.			
	e.	Reverse	the sighting telescope to the	normal position			
5			reticle level check on the TRI procedures in step 3 above,	R telescope.			
6.	Reb	Return the tracking antennas to normal operation					
	Œ.			e ANTENNA swatch to DISABLE			
	b			s and antenna test set, and remove the telescopes			
	U.	Set the	ANTENNA switches to NOR	MAL			

(U) Table 4-9.1 Monthly Boresight Checks-TTR and MTR

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Step	Opention	Normal Indication	Corrective procedure	
	Perform the	procedures in table 3-7		

(U) Table 4-9.2 Monthly Telescope Collimation Checks-TTR and MTR

Step	Operation	Normal indication	Corrective procedure
	Perform the	procedures in table 3-8.	

(U) Table 4-10. Monthly Lin-Log Receiver Checks-TTR

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tep	t pess in Normal indication (intector) procedure	
	Note: Formanuse AP in reference absorption. The MTR and PTR are cause are no same aimed at the radar test set mast or other common object.	сапес аму
1.	Prepare for the lin-log receiver checks,	
	a. Perform the procedures in table 2-1.	
	b On the target antenna control group, set the switches as indicated	
- 1	Switch Setting	
	TEST TEST AGC-LIN-LOG LIN-LOG RANGE TRACK TTR MULTI BIN OFF	
	e On the target track control power supply, set the switches as indicated	
-	Switch Setting	
	TTR PULSE WIDTH LONG AGC—MANUAL AGC IND R	
	 d On the target error voltage monitor, verify that the BEACON TARGET sw to TARGET 	itch is se
	e On the IF test generator, verify that the OSC switch is set to OFF	
	/ On the missile control netralor group, verify that the TARGET STAND SILE switch is set to STANDBY	BY MIS
	g Set the TTR range to less than 20,000 yards.	
	Note. The following check procedures was require a voltmeter	
2.	Check the dc balance of the logarithmic 1F amphier.	
	a On the TTR logarithmic IF amplifier, disconnect P176 from J2-IF INPUT	
	b On the sading frame for the analog receiver, connect a duvoltmeter bet (LIN LOG NOISE) and TP2 (DC GND). Connect the positive lead to TP1.	ween T
	The voltmeter indicates between +0.1 and -0.1 volts.	
	On the TTR logarithmic IF adjust the DC OFFSET contr	
	Refer to figure 48	
	c. Reconnect P176 to J2-IF INPUT	
3.	Check the gain setting of the linear IF amplifier	
	a. Observe the voltmeter connected in step 2b above.	

Dmlt this step if the checks in the preceding tables have been performed in sequence

(U) Table 4-10. Monthly Lin Log Receiver Checks-TTR-Continued

Step	Date had 18	Normal nates (on	Current ve procedury				
3.	Continued						
		The voltmeter indicates	between 0.6 and 0.8 volts.				
			On the TTR linear IF amplifier, adjust the GAIN ADJ control for a 0.7-volt indication				
			Refer to figure 48				
	b. Discon	nect the voltmeter.					
4,	Energize the	TTR transmitter in the long	pulse mode				
		target track contropower : press the HV SUPPLY-ON sw	supply, rotate the HV SUPPLY know to START				
		the HV SUPPLY knob to ob- meter white block.	stain an indication in the center of the MAGNE				
5.	Check the gr	nin of the logarithmic IF amp.	lfier,				
	a, Observ	e the upper sweep of the range	e indicator.				
		The complete transmitte	er pulse a present.				
			Perform the procedures in table 4-23, step 4				

(U) Table 4-10. Monthly Lin-Log Receiver Checks-TTR: Continued

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Step	Operation	Normal industrion	Carrective procedure				
5	Continued						
	The transmitter pulse amplitude is greater than 3/4 inch.						
			On the TTR logarithmic IF amplifier adjust the VIDEO GAIN control into no signal amplitude increase is dis cernible.				
			Refer to figure 48.				
	b. If the p switch to		ep 4 were performed, set the TTR RSPU MODE				
6	Check the lor	ng and short pulse passband :	filter switching.				
	a. Observe	the upper sweep on the rang	ge indicator.				
		The receiver noise ampl	stude is between 1/4 and 1/2 inch.				
			Refer to figure 48				
		ange indicator, note the app FFR PULSE WIDTH switch	earance and amplitude of the receiver noise to SHORT.				
		The receiver noise am served in b above.	plitude is within 1/8 mch of the amplitude ob-				
			Refer to figure 48.				
		The appearance of the r	ecewer noise changes.				
			Refer to figure 48.				
7.	Check the ran	ige delay of the lin-log receiv	e.				
	a On the t	arget antenna control group.	, set the MULTI BIN switch to ZERO				
	b Set the between	PTR range to position the 1/4 and 1/2 inch in amplitu	range notch under a range zero pulse which is de.				
	c. On the AID—AU	c. On the target antenna control group, set the range MAN ACQUIRE AID—TRACK AID—AUTO switch to AUTO					
		The range zero pulse is centered in the range notch,					
			On the target side of the signal dis- tribution panel in the radar set group, set the switches on the DLI delay line to center the range zero pulse in the range notch. If the delay line switch settings were changed, perform the				

8. Deenergize the transmitter.

Rotate the HV SUPPLY knob to START and depress the HV SUPPLY-OFF switch

procedures in table 2-8.

(U) Table 4-10. Monthly Lin-Log Receiver Checks-TTR-Continued

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Sies	tpe	ate the second site acts	NE 4 register hied re
9.	Rec	establish the switch positio	
	d	On the targes of tennals of	ntrocgroup, set the switches as (16) atea.
1		Switch	Setting
		MAN-ACQUIRE AID- TRACK AID-AUTO	MAN
		AGC-LIN-LOG	AGC
		MULTI BIN	OFF
	b	On the target track of LONG	ntro, power surpsy, set the TTR PULSE WIDTH switch to

(U) Table 4-11 Monthly MP Checks-TTR

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.	Opei	an Ion	Normal index ion	Course we binder his				
	Energize the TTR through operate in the short pulse mode							
	а		the procedures in table 2-5.					
	ь	On the	pulse generator indicator se STOP switch to STOP	t the PRE-KNOCK switch to TEST and the NO 1				
	с	On the	target track control-power su	ppiy, set the AGC MANUAL switch to MANUA				
	d	From 8	the max m m munterclock	wise position, adjust the GAIN knob until the approximately 1.2 inch in amplitude				
				appears on the target range indicator				
				Perform the procedures in table 2-6				
- 1				Refer to figures 46 and 65				
	e.	Center	the eighth pulse in the range	notch,				
	f		range MAN ACQUIRE A ord the range nagation. Dr	ID-TRACK AID-AUTO swatch to AUTO. No signate this indication as R				
	ø		on each of the other puses on to the first in descending	in stacession, starting with the seventh and coorder				
			Range of no. 7 pulse +	1,476 yds equals R : 50 yds.				
				Refer to figure 46				
			Range of no. 6 pulse +	2,623 yds equals R ±50 yds.				
				Refer to figure 46				
			Range of no, 5 pulse +	3,443 yds equals R +50 yds.				
			*	Refer to figure 46.				

tU; Table 4-11. Monthly MP Checks-TTR-Continued

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Step	Operati	on	Normal indication	Carrectlys procedure		
1,	Conti	nued				
			Range of no. 4 pulse +	3,935 yds equals R ±50 yds		
				Refer to figure 46		
			Range of no. 3 pulse +	7,869 yds equals R ±50 yds.		
				Refer to figure 46		
			Range of no. 2 pulse +	16,557 yds equals R ±50 yds		
				Refer to figure 46		
			Range of no 1 pulse +	-25,737 yds equals R ±50 yds.		
				Refer to figure 46		
				ACK AID: AUTO switch to MAN		
	1	On the pul	se generator indicator, se	et the JITTER 1-2-3 switch to 1		
	J.	Set the TT	R PULSE WIDTH switch	h to LONG.		
	Note. It may be necessary to increase the range to see all three pulses.					
			A group of three pulse	es appears on the target range indicator		
				Refer to figures 46 and 65.		
	fe:	Operate th	e JITTER 1 2-3 switc	ch to 2 and then to 3.		
			The last pulse changes			
				Refer to figure 46.		
	l,	Operate th	e JITTER—1 2—3 switc	ch to JITTER		
			The last pulse become			
				Refer to figure 46		
	m	Set the PF	RE KNOCK switch to N	ORM and the NO 1 RUN STOP switch to RUN		
2.	Deer	ergize the	TTR transmitter.			
	α			START and depress the HV SUPPLY OFF switch		
	b	Depress th	e MP switch and observe	e that the MP OFF indicator illuminates		
	£	Set the AC	C-MANUAL switch to	AGC		

U Tobic 4 1s . Monthly Presentation Checks-MTR

Step	Operation	Normal andication	Correct	we procedure
	Perform the	procedures in table 2-12		

(U. Table 4.12 Manthly Transmitter Checks-MTR

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Step	for any the Note has do was to the Correction for the control
1	Energize the MTR through low voltage
	Perform the procedures in table 2-1,
2	Remove transmitter sync.
	On the right side of the MTR coder, disconnect P6 from J2
J	Apply high voltage to the MTR.
	On the missile track control power scapily, rotate the HV SUP(IY knob to START and depress the HV SUPPLY-ON switch
	The HV SI PPLY-RFADY indicator light extinguishes, and the HV SLPPLY-ON indicator light dluminates.
	Refer to figure 32
	On the radar power control indicator, the MISSILE—HIGH VOLTS— PREHEAT, HOT, and READY and the MISSILE—INTEL indicator lights extinguish The MISSILE—HIGH VOLTS—ON indicator light filuminates.
	Refer to figure 32.
*4.	Check operation of the magnetron arc suppressor
	α On the MTR antenna support base, set the ANTENNA switch to DISABLE and the BLOWER switch to OFF
	b On the missile track RF contropower supply, connect a voltmeter between term.na. 32 and ground
	The voltmeter indication is between +145 and +155 volts.
	Refer to figure 27,
	c Disconnect the voltmeter
	d Disconnect the lead from the magnetron arc suppressor.
	e Momentarily short the center conductor on the arc suppressor lead to ground. To obtain a ground, the arc suppressor lead can be placed on the alignment prolocated above the upper right-swinging thumbnut used to secure the missue track RF control power supply.
	On the radar power control-indicator, the MISSILE—HIGH VOLTS—ON indicator momentarily extinguishes.
	Refer to figure 16.
	f. Reconnect the lead disconnected in d above.
	R Set the BLOWER switch to ON and the ANTENNA switch to NORMAL
5	Check the high voltage circuits.
	a. Operate the MAGNETRON switch to KV FS=20
	b Adjust the AV st PPLV knob until an indicasion of 16 kv is noted on the MAGNE TRON meter.

Don't this time if the chacks in the preceding tables have been performed in sequence

(U) Table 4-12. Monthly Transmitter Checks-MTR-Continued

Step	Operation	Normal indication	Corrective procedure
5.	Continued		
		When performing c below, by the MAGNETRON meters	nsure that the high voltage power supply current r, does not exceed 5 ma.
	ternate	monitoring both voltage anely to KV FS=20 and MA an indication of 20 ky or 5 i	d current by setting the MAGNETRON switch al- FS=100, slowly adjust the HV SUPPLY knob to

(U) Table 4-12. Monthly Transmitter Checks-MTR-Continued

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Sup	Operation	Normal sadication	Conrective procedure
Б.	Continued		
		A voltage of 20 kv can	be obtained with a current of 5 ma or less.
			Warning Voltages DANGEROUS TO LIFE exist in the missile track receiver- transmitter. Before performing main- tenance on the unit, deenergize the sys- tem and discharge all capacitors using the shorting bar.
			"Note if excessive current is noted, the -500-voit (bias) power supply and pulse amplifier VI should be suspected. The bias voltage can be measured in the law voltage condition. Repeating step 5 with the leads to VI disconnected can solute VI.
			Refer to figure 16.
		The current indication	remains steady.
			Refer to figure 16.
6.	Deenergize th	ne transmitter and restore no	ormal connections.
	a Rotate	the HV SUPPLY knob to S	TART and depress the HV SUPPLY-OFF switch
	b. On the	coder, reconnect P6 to J2	
7.	Perform the	weekly MTR transmitter che	eck procedures in table 3-9

(U) Table 4-13 Monthly Transmitter Frequency Setting Capability Checks—MTR

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Step	Opention	Normal addication	Corrective procedure
1,	Prepare the A	fTR for the check.	
	Perform the	procedures in table 2-1.	
2.	Prepare the r	adar test set for the check.	
	a. Verify t	hat the AC POWER switch i	s set to ON.
	b. Set the	FUNCTION switch to LOCA	AL.
	c Set the	METER switch to 0 dBm Fi	JLL SCALE RF LEVEL
3.	Energize the	MTR through operate	
	Perform the	procedures in table 2-13, ste	ps 1, 2, and 4
4.	Check the M	FR transmitter frequency.	
	the MTR has .		the missile bandpass filters are used in the missile or whe The nominal center frequency of the missile bandpatthe same.

Omit this step if the chacks in the preceding tables have been performed in sequence

it, Table 4-13 Monthly Transmitter Frequency Solling Capability Checks-MTR-Continued

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Step	Oper	ntion	Nozmal Indication	o .	Corrective procedure				
4.	Cor	itinued							
	 a. On the missile control-indicator group, rotate the azimuth and elevation han to position the MTR antenna to the coordinates of the radar test set. 								
	The RF POWER dB meter indicates between 0 and 5.								
					Slowly rotate the azimuth handwheel until an indication between 0 and 5 is obtained. Maintain this position until frequency measurement is completed.				
	ь	POWER	dB meter indicat	ion (A dip c	the radar test set to obtain a dip in the RF of $0.5~\mathrm{dp}$ or greater is normal)				
	c.	Record t	he setting of the	MEAS-FRE	Q meter.				
			The frequenc	y indication	is within 15 MHz of the assigned frequency.				
					Perform the procedures in table 6-15 Refer to figures 92 and 93				
		Note. The operating (assigned) frequency is the nominal center frequency of the antenna horn filters in use in the missile receiving antennas, as specified below							
					Nominal				
			Antenna hom		center frequency				
			ord no.	Code	(MHz)				
			8620881	Li	9560				
			8520832	L2	9300				
			8520833	L8	9060				
			8520834 8520836	L4 L6	8500 8550				
			8520836	LB	None				
Б.	Cor	idition the	radar test set for	remote ope	ration.				
	a.	Set the B	FUNCTION swite	h to RMT.					
	b.	Rotate t	he MEAS FREQ	knob fully e	w.				
6.	Dec	energize th	e MTR transmitte	er					
			le track control p V SUPPLY -OFF		, rotate the HV SUPPLY knob to START and				

Corrective procedure

mark

tuning drive

(4) Replace the flexible cable to the

(U, Table 4-14. Monthly Target AFC Checks-MTR

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S. rmail indication

Step	Opera on Normal Indias	1 lots	arree the procedure			
I.	Prepare for the target AFC of a Perform the procedures					
			oken an andronted			
		ntrol drawer, set the swit	ches as mulcated			
	Su tich	Setting				
	TEST DISABLE	TESI down				
	RANGE	ZERO				
		oltage monitor verify that N-TARGET switch is se	it the RCVR TEST switch is not set to to TARGET			
	d On the missie track of	control-power supply, se	t the TUNE SLEW switch to SLEW			
2.	Energize the MTR transmitte	er				
		N switch Adjust the H	he HV SUPPLY knob to START and V SUPPLY knob to obtain an indica			
3.	Check the crystal current and local oscillator (VTO) output at the converter					
i	a On the missile track antenna support base set the ANTENNA switch to DISABLE					
- 1	b Set the BLOWER switte	b to OFF				
	INCREASE switch to	c On the missile track RF control-power supply set the FREQUENCY DECREASE INCREASE switch to DECREASE Operate and hold the FREQUENCY TUNE switch until the magnetron tuning drive stops.				
		nark on the magnetron tu he tuning drive housing.	ning drive dial coincides with the index			
		(1	.) Remove the flexible cable from the tuning drive			
		(2	 Manually tune the magnetron un- th the magnetron frequency dial reaches the low frequency stop. 			
		(S	3) Using the FREQUENCY-DECREASE-INCREASE switch and the FREQUENCY-TUNE switch, tune the magnetron tuning drive until the LO mark on the tuning drive dial coincides with the index			

Dmit this step if the checks in the preceding tables have been performed in sequence

(U. Tobie 4-14 Monthly Target AFC Checks-MTR: Continued

e i:	Oner	rut iss	Some at incontrols	Corrective braces age	
3.	Cor	ntinued			
	d	At the re amphfier-	ussi e track receiver transmi converter to each position l	ther set the crystal surrent switch on the track from CRI through CRS.	
		·		indicates a steady value between 0.8 and 2 μa for	
			each position.	Adjust variable attenuator AT7 and re- peat d above	
			The AFC LOCK indicat	or on the target AFC is illuminated and steady Perform the procedures in table 5-1	
	e.	On the ta	rget AFC, remove the coax:	al cable from J3-IF IN	
	ю.	On alle to	The AFC LOCK indicat		
			1110 1110 110 110 110 110 110 110 110 1	Refer to figure 22	
	f	Reconne	ct the coaxial cable to J3-IF	IN	
			The AFC LOCK indicate	or is illuminated and steady	
				Perform the procedures in table 5-1	
	g Set the crystal current switch to the position that exhibits the lowest cry				
- 1	h			INCREASE switch to INCREASE	
	ŧ			TUNE switch until the magnetron tuning drive	
			The XTAL CUR meter	indicates a steady value between 0.8 and 2 µa	
				Reset variable attenuator AT7	
			The AFC LOCK indic	ator is illuminated and steady as the magnetro	
				Perform the procedures in table 5-1	
- 1	J.	If variab.	e attenuator AT7 was adjus	sted, repeat step 3	
	k	Set the c	ry stal current switch to OF	F	
	l.	Set the E	LOWER switch to ON		
	177	Set the A	ANTENNA switch to NORM	AL.	
4	Es	tablish oper	sating frequency of the tran	smitter to frequency of the assigned cavity,	
	a	Perform	the procedures in table 2-1	3, step 4.	
	b	On the r	missile error voltage monito:	r, set the BEACON- Γ ARGET switch to TARGET	
	E		n ssue track contro-power in of 3 ma on the MAGNET	supply, adjust the HV SUPPLY knob to obtain a RON meter	
5	Pe	rform the d	aily target AFC check proc	edures in table 2-14, steps 3 through 5	

(U) Table 4-15. Monthly Beacon AFC Cheaks-MTR

		0	NULASSIFIED
Step	Oper	ration Normal indication	Corrective procedure
		ote To minimize RF interference ad at the radar test set mast or off	e insure that the MTR and TTR antennas are not simultaneously tar common object.
1,	Pre	pare for the beacon AFC che	cks.
	a.	Perform the procedures in	
	b	On the missile track contro	I drawer, set the switches as indicated
		Switch Setti	nd
		TEST TES	·
		DISABLE dow	
	c	On the missile control-indic	cator group, set the switches as indicated
		Switch	Setting
	1	TARGET-STANDBY-MI	
		SIGNAL LEVEL	00
		FREQ SELECT	LOCAL
		MODE	CW
		Adjust the FREQUENCY	
	d.		-power supply, set the AGC MANUAL switch to AGC
	e		monitor, set the switches as indicated
		Switch	Setting
		(IF TEST)- ADJ	ADJ BIAS
		RCVR TEST BEACON-TARGET	BEACON
		PRESET	2
	f.	Momentarily operate the S	WEEP PRESET switch.
	"	* *	TER indicator is illuminated
			Refer to figure 28,
	R.	On the missile IF test gener	rator, set the switches as indicated.
	"	Switch	Setting
		OSC	ON
		MODE	cw
		PULSE WIDTH	SHORT
		0-90 dB ATTENUATOR 0-9 dB ATTENUATOR	30 0
2,	Steel		
4,	961	On the terget error voltege	generator to ou Mriz. monitor, set the (IF TEST) ADJ switch to ADJ and the
	-	RCVR TEST switch to BL	
	1		

⁴Omit this step if the checks in the proceeding tables have been performed in sequence,

(U) Table 4-16 Monthly Beacon AFC Checks—MTR—Continued
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g to h	Operation	Normal unitigation	Corrective procedure		
2,	Continued				
	b On the target track control power supply, set the AGC MANUAL switch to AGC and the TTR PULSE WIDTH switch to LONG				
	c On the t	arget 1F test generator, disc	onnect P128 from J4-ATT OUT		
	d On the r	nasale IF test generator, dis	connect P1 from J4 ATT OUT		
		a coasial cable from J4-A in c above	TT OUT on the missile IF test generator to P128		
	the FIN	e mussle IF test generator C E IF FREQ ADJUST conti tage monitor RCVR TEST	OARSE IF FREQ ADJUST control set to 0, adjus- ted to obtain a maximum indication on the targe- meter.		
	g. Remove target IF	the coaxia, cable added in test generator and P1 to J4	e above Reconnect P128 to J4-ATT OUT on the i-ATT OUT on the missile IF test generator.		
3.		eriminator cross-over freque			
	a On the r	nasile error voltage monitor	, set the RCVR TEST switch to AFC		
		The RCVR TEST mete	r indicates between 40 and 60.		
			 On the missile beacon AFC, adjust the FREQ TRIM control. 		
			(2) Perform the procedures in table 5-2		
	b On the r	nussile IF test generator, set	the OSC switch to OFF		
	Check the dis	criminator output due to re	ceiver noise.		
	On the missile error voltage monitor, verify that the RCVR TEST switch is set to AFC				
		Note. The meter indicati	on should be observed for at least 15 seconds.		
		The RCVR TEST mete	r average indication is approximately 50.		
			(1) On the missile beacon AFC, adjust the NOISE BAL control.		
			(2) Perform the procedures in table 5-2		
	Check the dis	criminator output slope.			
	a. On the n	usske IF test generator, set	the OSC switch to ON		
		The RCVR TEST mete			
			On the missile IF test generator, adjust the FINE IF FREQ ADJUST control.		
	b. Set the C	OARSE IF FREQ ADJUST	Control to +1.		
1		The RCVR TEST meter	r indicates between 65 and 80.		
			Perform the procedures in table 5-2.		
	c. Note the	indication on the RCVR T			
		Oarse if freq adjust			

(U) Table 4-15. Monthly Beacon AFC Checha- MTR -Continued

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Step	The ation	No mail north-rost		Corrective procedure		
5.	Continued					
	e Subtrac	t the indication noted	in c above fro	om 100		
		The RCVR TEST	l' meter indica	tes within 10 of the computed number		
				Perform the procedures in table 5-2		
	f. On the	missile IF test generate	or, set the swi	tches as indicated		
		Switch	Setting			
İ	osc		OFF			
		B ATTENHATOR	90			
	Set the	COARSE IF FREQ A	DJUST contro	ol to 0		
6.	Check the be	acon AFC loop gain				
	a On the miss le error voltage monitor, set the RCVR TEST switch to BIAS.					
	b Acquire the radar test set in the CW mode using the procedures in table 2.15, step 2a through e and step 2a through e lastead of the PRESET 1 COARSE and FINE controls, use the PRESET 2 control					
				omtor RCVR TEST meter, adjust the FRE dicator group to obtain an indication of 80		
		The FREQUENC	'Y control dia	d andientes between 260 and 420.		
				Perform the procedures in table 5-2		
	d Adjust meter	the PREQUENCY con	ntroi to obtai	an indication of 20 on the RCVR TEST		
		The FREQUENC	Y control dia	l indicates between 580 and 740		
				Perform the procedures in table 5-2.		
7	Perform the	daily beacon AFC che	ck procedures	in table 2-15		

(U) Table 4-15.1 Monthly Range System Checks-MTR

Step	Operation	Normal Indication	Corrective procedure	
	Perform the	procedures in table 2-16		



(L. Table 4-16. Monthly Monopulse Receiver Checks-MTR

			UNCEASSIFIED		
T	Open	ation A may habita do	n Cottetine procedure		
		or To minimize RF aterfere	ance has a the MTR and TTR antennas are α -simulaneous therefore monotopics		
	Prep	pare for the monopulse rec	ewer checks.		
	a.	Perform the procedures is	n table 2 1 '		
	ь	On the missile track conti	roi drawer, set the switches as indicated		
		Switch Se	tting		
1		TEST TEST	I .		
ı		DISABLE down			
Т		RANGE NOR	MAL		
П	¢	On the missile control in	dicator group, set the switches as indicated		
1		Switch	Setting		
1		SIGNAL LEVEL	00		
		FREQ SELECT	REMOTE		
		MODE	PULSE		
		PULSES	SINGLE		
		TARGET-STANDBY- MISSILE	STANDBY		
	d	On the missile track conset to AGC	trol-power supply, verify that the AGC-MANUAL switch		
	e	On the missile error voits	ige monitor, set the switches as indicated		
		Switch	Setting		
		(IF TEST)-ADJ	ADJ		
		RCVR TEST	BIAS		
		BEACON TARGET	BEACON		
		PRESET VID MON	1 SLW		
ļ		A TO MOD	DC .41		
	f On the massle error voltage monitor, momentarily operate the SWEEP PRESE switch				
ı		The SWP CE	ENTER indicator is illuminated.		
			Refer to figure 23		
1	g	On the IF test generator,	verify that the OSC switch is set to OFF		
		ore. For the remainder of this other unless otherwise indicated	table, all switches and meters are located on the missue error voices		
	Che	eck the gain setting of the s	um main IF amphfier.		
		serve the RCVR TEST met	· · · · · · · · · · · · · · · · · · ·		

Qualit this step if the cheeks in the preceding tables have been performed in sequence

II.) Table 4-18 Monthly Manapulse Receiver Checks-MTR Continued

	U.) Tabi		ulse Receiver Checks—MTR Continued ASSIF ED	
Stop	C peravion	Normal natication	f arrective procedure	
2.	Continued			
		The average AGC	olas indication is between 0 and 10	
			(1) On the missile sum main IF an fier, adjust the GAIN ADJ con to obtain an average indicatio 5 on the meter	trol
			(2) Perform the procedures in table	5-3
8	Check the AGO	level setting.		
	a On the IF	test generator, set th	e switches as indicated	
	Ştı	itch	Setting	
	OSC		ON	
	MODE		CW	
	SLEW RA	TÉ	OFF	
	0 -9 0 dB.	ATTENUATOR	30	

- PULSE WIDTH SHORT

 b On the IF test generator, adjust the COARSE and FINE IF FREQ ADJUST controls for maximum indication on the RCVR TEST meter
- c Set the (IF TEST)-ADJ switch to (IF TEST) and the RCVR TEST switch to (SUM,

The RCVR TEST meter indicates between 45 and 55.

On the missile IF distribution and AGC control, adjust the AGC ADJ control to obtain an indication of 50 on the meter

4. Check the AGC response.

0-9 dB ATTENUATOR PULSE WIDTH

a On the IF test generator, vary the 0-90 dB ATTENUATOR switch in 10-db steps from 0 to 50 dB

The RCVR TEST meter indicates between 45 and 55.

Refer to figure 17

b Vary the 0-90 dB ATTENUATOR switch in 10-db steps from 50 to 90 dB

The RCVR TEST meter average indication is between 40 and 60

Refer to figure 17

5. Check the sum video gain.

- On the IF test generator, set the 0-90 dB ATTENUATOR switch to 0 dB. Set the MODE switch to PULSE. Momentarily depress the RANGE PRE SET switch
- b Set the MTR range to place the IF test pulse adjacent to the range notch. Note the signal amplitude on the range indicator.

(U) Table 4-16. Monthly Monopulse Recewar Checks-MTR-Continued

		UNCLASS	
20	Орега о п	No drafting castion	Corrective procedure
,	Continued		Annal Andrew Co. D
	c On the	ge notch to obtain minimum	RANGE TRIM control to center the test pulse in pulse amplitude
		The signal amplitude is and one half of the am	elauve to the sweep baseline is between one third plitude noted in b above
			Perform the procedures in table 6-3, step 5
	d. On the	IF test generator, set the MC	DDE switch to CW
,	Check the s	ain variation between the IF	amphfiers.
	Note Nort	naily go n variations are due to to paths in lable 6.8	compensations made for gain variations in the receiver RF
-	a. On the	IF test generator, set the 0	90 dB ATTENLATOR switch to 30 dB
		RCVR TEST switch to (AZ)
		The RCVR TEST met	er indicates between 30 and 80.
			Perform the procedures in table 5-3 step 7
	c. Set th	e RCVR TEST switch to (EL).
		The RCVR TEST met	er indicates between 30 and 80.
			Perform the procedures in table 5-2 step 7.
	d. On th	e IF test generator, set the O	SC switch to OFF
	e Set th	e RCVR TEST switch to BIA	AS and the (IF TEST) ADJ switch to ADJ
7	Check the	RECEIVED SIGNAL meter	
	a Ho.d GAIN	the REMOTE-LOCAL swi	tch in the LOCAL position and adjust the MAI ion of 10 on the RCVR TEST meter
		The massle RECLIV indicates between 0.5	ED SIGNAL meter on the missile tracking consolution and 1.5.
			Refer to figure 17
		Note: Each major met-	er division equals approximately 10 db
	b Adjus		obtain 80 on the RCVR TEST meter
			ED SIGNAL meter on the missile tracking conso
			Refer to figure 17
	c. Relea	se the REMOTE-LOCAL sv	ritch
8.	Check the	sum, azimuth, and elevation	channel receiver sensitivity
			tep 2 and table 2-17, steps 4b through 9

4U, Table 4-16. Monthly Monopules because Checks-MTR: Construed

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S ep	Ohearin	N remail netical ion	Oxidering broughts
8.	Continued		
		'EL switch indication obtained in table 2.17, step hast computed MTR receiver sensitivity figure by	
			Perform the procedures in table 5-16 to obtain a new computed MTR receiver sensitivity figure

16 Table 4 16 1 Monthly ATC Checks- MTR

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Step	Орегизав	No mai aid ca ton	Caster in procedure
	Perform the	procedures in table 2-18	

(U), Table 4-16 2. Monthly AGC Monitor Checks-MTR

UNCLASSIFIED

Step	Operagno	Se maind rains	Corrective procedule	
*	Perform the	procedures in table 3-10 3-	43 A	

(U) Tuble 4-17 Monthly Tracking Servo Checks: MTR

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Step	Operat	Mormal indication	Corrective procedure				
I.	Prepare the MTR for the check,						
	Q	Perform the procedures in table 3 performed in sequence, omit step 2	11 If the checks in the preceding tables have been of table 3-11.				
	b	On the missie track control drawer	, set the DISABLE switch to the down position				
	-		wer supply, set the AGC-MANUAL switch to b until the COAST indicator light on the control				

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4 42.1/(4-42.2 blank)

(U) Table 4-17 Monthly Tracking Serva Checks—MTR—Continued CONFIDENTIAL

Step	Operation N	ormal indication	Corrective procedure				
1.	Continued						
	Note In the follow disregarded.	ing steps where stationary	displays are required the alternating 1 100 digit can be				
2.	Perform the range s	ervo balance check.					
	a. On the missile track control drawer, set the range MAN-AID-AUTO switch to MAN						
	b. Observe the ra	nge displays on the mi	ssile range indicator.				
	Т	he range displays are s	tationary.				
			On the range handwheel drive control, adjust the BAL variable reastor.				
			Refer to figure 20.				
3.	Perform the range i	andwheel calibration.					
	a. Set the MTR r	ange to 20,000 yards.					
	b. Turn the range	e handwheel clockwise	ten turns.				
	Т	he MTR range indicati	on 1s between 21,450 and 22,050 yards.				
			Perform the procedures in table 6-7, step 4d.				
4.	Perform the azimut	Perform the azamuth servo balance checks.					
	a. On the missile MAN.	e track control drawe	r, set the azimuth MAN-AID-AUTO switch to				
	Т	he azımuth displays ar	e stationary.				
			On the azimuth handwheel drive con- trol, adjust the BAL variable resistor. Refer to figure 18				
	Note. Do not move	the azimuth bandwheel .n	ð and c below.				
	b. Set the azimut	h MAN AID-AUTO	switch to AID				
	т	he azimuth displays ar	a stationaus				
		ne æmika mspays a	On the azimuth handwheel drive con- trol, adjust the R3 variable resistor mounting bracket.				
	c Set the azimut	h MAN-AID-AUTO	switch to MAN, then to AID and back to MAN.				
		he azımuth dispiays re					
			Repeat the procedures in step 4.				
5.	Perform the elevati	on servo balance check					
			as between 0 and 3,200 mile				
	_		r, set the elevation MAN AID—AUTO switch to				

(U) Table 4-17. Monthly Tracking Serva Checks-MTR-Continued

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BIOD	Operation	Normal codication	Controline bicondule				
Б.	Continued						
		The elevation displays a	re stationary.				
			On the elevation handwheel drive cor trol, adjust the BAL variable resistor. Refer to figure 19.				
	Note: Do no	move the elevation handwheel in	o and a below				
	b. Set the	elevation MAN-AID-AUTO	switch to AID.				
		The elevation displays a	re stationary,				
		,	On the elevation handwheel drive cor trol, adjust the R8 variable resisto mounting bracket.				
	c Set the	elevation MAN-AID-AUT	O switch to MAN, then to AID and back to MAN				
		The elevation displays r	emain stationary				
			Repeat the procedures in a through above				
6.	Perform the	Perform the range servo aided rate check,					
•	a, Set the	MTR range to approximately	100,000 yards.				
	b. Set the	MTR RSPU COORD SELEC	T switch to D-RATE.				
	c, Set the	range MAN-AID-AUTO sw	iten to AID.				
	d. Rotate	the range handwheel four an	d one-half turns counterclockwise				
	The MTR RSPU COORD DISPLAY indicates between 1,656 and -2,328 yards/second. Note the indication.						
			(1) Set the range MAN—AID—AUT switch to MAN. Set the MT RSPU COORD SELECT switch t D-FCN Perform the procedures table 6-7, step 4d				
			(2) Repeat the procedures in a throug d above.				
	e. Set the	range MAN-AID-AUTO sw	itch to MAN				
7.	Perform the	azimuth servo rate checks.					
	a. Position	the MTR antenna elevation	to 0 mils.				
	b, Set the	MTR range to 1,500 yards.					
	c. On the l	MTR RSPU, set the COORD	SELECT switch to Y-RATE				
	d. Set the	azimuth MAN-AID-AUTO	switch to AID				

e. Rotate the azimuth handwheel six turns clockwise or counterclockwise

On the azimuth coupling resistor assembly, adjust the AZIMUTH—AID variable

(U) Table 4-17 Monthly Tracking Servo Checks-MTR Continued

CONFIDENTIAL.

Corrective procedure

The indication on the MTR RSPU COORD DISPLAY varies. The maximum negative and maximum positive indications are both between 800

Norma, indication

and 648 yards/second.

50p

7.

Operation.

Continued

		resistor
		Refer to figure 18.
	f	On the missile track control drawer, set the SERVOS switch to INC and the azimuth MAN-AID-AUTO switch to AUTO. Wait approximately 30 seconds until the amenia rate becomes steady.
		The indication on the MTR RSPU COORD varies. The maximum nega- tive and maximum positive indications are both between 984 and 1,080 yards/second.
		On the azimuth coupling resistor assembly, adjust the AZIMUTH—AUTO variable resistor. After each adjustment, allow the antenna rate to become steady
		Refer to figure 18.
	g	Set the azimuth MAN-AID AUTO switch to MAN and the SERVOS switch to NORMAL
8.	Per	form the elevation servo rate checks,
	g.	Verify that the MTR range is set to 1,500 yards.
	b	Rotate the azimuth handwheel to position the MTR antenna azimuth to 0 mile
	C	Rotate the elevation handwheel to position the MTR antenna elevation to 0 mils
-	ct.	On the missile elevation coupling resistor assembly, depress and hold the ELEVA- TION PRE AMPBAL switch.
	e	Set the elevation MAN AID-AUTO switch to AID, and rotate the elevation hand-wheel six turns clockwise.
	read	aution Set the elevation MAN—AID—AUTO switch to MAN before the MTR antenna ches 3,200 mils.
	f	While carefully observing the MTR RSPU COORD DISPLAY, release the ELEVATION PRE AMP BAL switch.
		The first maximum MTR RSPU COORD DISPLAY indication is between —600 and —648 yards/second. The maximum indication occurs at 1,600 mils elevation.
i		On the elevation coupling resistor as-
		sembly, adjust the ELEVATION-AID
		variable resistor Set the elevation
		MAN AID—AUTO switch to MAN and repeat c through f above
		Refer to figure 19.
		CONFIDENTIAL 4-45

(II), Table 4-17. Monthly Tracking Servo Checks—MTR—Continued
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5 en	Spleria	ion	No marind eation	Corre & s pracedure
8.	g. h j.	Rotate : Depress Set the INC	and hold the ELEVATION elevation MAN - AID- AI	position the MTR antenna elevation to 0 mus
	reach	nes 3,20	0 mils.	od while carefully observing the MTR RSPU COORD
	le le	DISPLA	Y, release the ELEVATIO	N PRE AMP BAL switch.
			The first maxmum N -984 and -1,080	ITR RSPU COORD DISPLAY indication is between
				On the elevation coupling resistor assembly, adjust the ELEVATION—AUTO variable resistor. Set the elevation MAN AID—AUTO switch to MAN and repeat h through h above. Refer to figure 19
	_	Set the		UTO switch to MAN and the SERVOS switch to
	m,	Set the	MTR RSPU COORD SEL	ECT switch to D-FCN
	n.	Set the	AGC-MANUAL switch to	AGC

IU, Table 4-18. Monthly Radar Coder Checks-MTR

Step	Operation	Normal indeation	Corrective proceduze
1,	Perform the through 4.	procedures in table 2-20, a	steps 1, 2, 3, $4f$, 5, and 6, and table 3-12, steps 2
2.	Prepare the c	omputer for the radar code	r checks.
	a. Have th	e computer of erator perfor	rm the procedures in b and c below upon request
	b. From th	e computer CODER TEST	menu, select PCH and depress CR
	Note To obt	air the CODER TEST menu t	may be necessary to depress CTL and Z simultaneous v
		CODER TEST 11 is di	splayed on the computer display.
			Refer to figure 36
1			

(U. Table 4-18 - Monthly Radar Coder Checks-MTR: Gont mucd

Scop	r ne	aton Norton and cataon Corrective procedure
2	Coi	inved
	C.	Depress CTL and C simultaneously to obtain CODER TEST 12
		On the coder control panel, the PTTCH and YAW ZERO indicators illuminated,
3.	Pre	are the MTR for the radar coder cheeks,
	ıı	On the coder centro, panel, set the BATTERY CODE switch to $4\ \mathrm{arJ}$ the SELL switch to PITCH
	b	On the massile track control drawer, set the TEST switch to TEST
	*	te. Have the computer operator percorm, he procedures in the hop leadle sceps below (policeque
4.	Cho	ck the pitch orders received from the computer as generated by the coder
	a	Set the MTR range to center the number two pulse in the range notes
	н	On the mass le track control drawer, set the range MAN- AID $$ AUTO switch AUTO $$
	Ċ.	On the MTR RSPU, set the COORD SELECT switch to D-FCN
	d	Record the setting of the MTR RSPU BEACON DELIAY switches
	"	Adjust the BEACON DELAY switches and momentar ly depress the ENTER awi until the COORD DISPLAY indicates 0 yards
	$-I_{i}$	Set the range MAN-AID-AUTO switch to MAN,
	g	Set the MTR range to center the number four purse in the range note: Set the range MAN-AUTO switch to AUTO.
		Only one pulse appears in the range notch,
		Refer to figure 36
		The COORD DISPLAY indicates between 14,314 and 14,374 yards.
		Refer to figure 36
	h.	Set the range MAN-AID-AUTO switch to MAN
	t	On the keyboard Jisplay, select CODER TEST 13 by depressing CIL and C similar couply $% \left(1,2,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,3,$
		On the range indicator, the pulse moves to the right and remains will the sweep expansion pulse.
		Refer to figure 36
		On the coder control panel, the PITCH ZERO indicator is not illuminate
		Refer to figure 36
	,	By depressing CTL and C simultaneously, sequentially step the computer COD TEST from 14 to 21 $$
		For each CODER TEST step, the number four pitch pulse moves to right (out in range).
		Perform the procedures in table 5-20

(L.) Table 4-18 Monthly Radar Coder Checks-MTR-Continued

			CONFIL	ENTIAL	
Stee	PER-TIL	D	Х тангесат п	t me	о в с с €
	Con	inued			
1	4	Set the WT furthest out		e number four pit	h passe in the range of A coulse
		Est the cons	MAN-AID-AUTO	switch to AUTO	
	'	Der tire rank	The COORD DISPL	AY indicates betw	een 20,051 and 20,111 yards
			1110		Refer to figure 36
			On the coder conti	rol nanel, the PIIC	II +MAX indicator is illuminated
			011 1111 11111111		Refer to figure 36
		Cot the resu	e MAN-AID-AUTO	Switch to MAN	
	m n	January the	CTL and Ckeys san	ultaneously to obta	asn CODER TEST 22
	, r	prepress are	The number four p	itch pulse slightly d	lecreases in range.
			Elle Hammer 44-17		Refer to figure 36
			On the coder con	trol andicator, the	PITCH +MAX indicator is extin-
	i		guisned		Refer to figure 36
		DCT	L and C simil taneou	dy to obiam COD	
	0		R range to 14,344 ye		
	p	See the MT.	One single pulse ap	nears in the sween	expansion pulse.
			Otte 2018te hurse ab	Treats at less owner.	Refer to figure 36
	q	By depress TEST from	ing CTL and C sim	u taneousiy, seque	nually step the computer CODER
		1631 1000			imber four pitch pulse moves to the
	1		Tete (deriemnis	·m- /-	Refer to figure 36
	-	Sat the MT	'R range to 8,606 ya	rds.	
	1	ger me ni i		ears in the sweep ex	mansion pulse.
	1		tt onder hame obb.		Refer to figure 36
			On the coder con	trol panel, the PIT	CH -MAX indicator is illuminated
			CHI GIR COACE COIII		Refer to figure 36
	Ŋ		FR range to center to Switch to AUTO	be pulse in the rar	nge notch, and set the range MAN
		ALD AU		AY indicates bet	ween 8,576 to 8,636 yards Refer to figure 36
				700 L	
	I I		ige MAN-AID-AU		
	11	Depress C.	IL and C samultaneo	usly to obtain CUL	PER FEST OF INDICATE IS NOT THE
			On the coder co minated	ntrol panel, the b	PITCH, -MAX indicator is not illu- Refer to figure 36
	1				

(U) Table 4-18, Monthly Radar Coder Checke-MTR-Continued

			CONTIDE	THAL					
iep	Open	itian.	Normal andication	Corrective preservants					
4	Con	tinued							
	ů.	Depress	CTL and Z simultaneously	to obtain the CODFR TEST menu					
5	Check the yaw orders received from the computer as generated by the coder								
	а	On the o	oder control panel, set the	SELFCT switch to YAW					
	b	From th	e computer CODER TEST	menu, select YAW and depress CR					
				splayed on the computer display					
				Refer to figure 36,					
				anel, the YAW/ZERO indicator is extinguished					
	E		CTL and C simultaneously t						
	d	Set the range M	MTR range to center the n AN-AID-AUTO switch to	umber four yaw pulse in the range notch. Set t	he				
			Only one pulse appears	in the range notch.					
				Refer to figure 36					
			The COORD DISPLAY	indicates between 14,314 and 14,374 yards					
				Refer to figure 36					
	e.		range MAN-AID-AUTO sw						
	f	By depr	ressing CTL and C summetar om 36 to 44.	reously, sequentially step the computer CODI	R				
			For each CODER TES right (out in range).	T step, the number four yaw pulse moves to t	he				
				Perform the procedures in table 5-2	1				
	R		he MTR range handwheel i ulse farthest out in range).	o center the number four yaw pulse in the ran	ge				
	h,	Set the r	ange MAN-AID-AUTO sw	atch to AUTO					
			The COORD DISPLAY	indicates between 20,051 and 20,111 yards.					
				Refer to figure 36					
			On the coder control pa	anel, the YAW/+MAX indicator is illuminated,					
				Refer to figure 36.					
	ř.	Set the r	ange MAN -AID-AUTO sw	itch to MAN					
	J.	Depress	CTL and C simultaneously t	o obtain CODER l'EST 45					
			On the coder control pa	mel, the YAW/+MAX indicator is extinguished					
				Refer to figure 36					
			The range of the number	er four yaw pulse decreases slightly					
				Refer to figure 36.					
	k	Depress	CTL and C simultaneously t	o obtain CODER TEST 46					

(U) Table 4-18. Monthly Radar Coder Checks-MTR-Continued

Віфр	Operation	Norma Indication	Corrective procedure			
5.	Continu	ued				
	t Sa	t the MTR range to 14,34	44 yards.			
		A single pulse	appears in the sweep expansion pulse.			
			Refer to figure 36			
		depressing CTL and C to 55	simultaneously, sequentially step the CODER TEST from			
		For each COI left (decreasing	ER TEST step, the number four yaw pulse moves to the grange).			
			Refer to figure 36.			
	n. A	djust the MTR range han	idwheel to obtain an indication of 8,606 yards on the MT			
			control panel, the YAW/ MAX indicator is illuminated.			
			Refer to figure 36			
		A single pulse	appears in the sweep expansion pulse.			
			Refer to figure 36			
	o. Adjust the MTR range handwheel to center the pulse in the range notch					
		p Set the range MAN-AID-AUTO switch to AUTO				
	The COORD DISPLAY indicates between 8,576 to 8,636 yards.					
			Refer to figure 36			
	q S	et the range MAN-AID-	AUTO switch to MAN.			
		Depress CTL and C simultaneously to obtain CODER TEST 56				
		On the coder	control panes, the YAW/-MAX undicator is extinguished			
6.	Check	the position of the pitch	and yaw number three pulses.			
	a. c	In the coder control pane	l, set the switches as indicated.			
	1	Switch	Setting			
	1 1	PREKNOCK COMMAND ORIGIN PITCH Y AW BURST ORDER BURST ENABLE SELECT	TEST SIMULATED +MAX ZERO NORMAL NORMAL BOTH			
	b. 1	Adjust the MTR range ha	ndwheel to place the range notch under the number 3 public pulse farthest out in range).			

(U) Table 4-18. Monthly Radar Coder Checks-MTR: Continued

		CONFIDE	NIIAL				
Step	Operation	Normal indication	Corrective procedure				
6.	Continued						
	c. Set the	range MAN-AID- AUTO sv	vitch to AUTO.				
		The COORD DISPLAY indicates between 18,956 and 19,076 yards. Refer to figure 36.					
	d. Set the	range MAN-AID-AUTO sv	vitch to MAN				
	e On the	coder control pane., set the	YAW switch to +MAX				
		A second pulse appear sion pulse.	s on the range indicator within the sweep expe				
			Refer to figure 36				
	f. Set the	PITCH switch to ZERO					
		the MTR range handwheel to range notch.	o center the pulse within the sweep expansion ar				
	h. Set the	range MAN-AID-AUTO sv	witch to AUTO.				
		The COORD DISPLAY	indicates between 18,792 and 18,912 yards.				
			Refer to figure 36				
	i, Set the	range MAN-AID-AUTO sv	witch to MAN				
	J. Set the	YAW switch to ZERO.					
7.	Check the p	osition of the burst pulse.					
		the MTR range handwhee. COORD display	to obtain an indication of 0 yards on the M				
		Only one pulse appears	s in the sweep expansion area.				
			Refer to figure 36.				
	b. On the	coder control panel, set the	BURST ORDER switch to TEST				
		A second pulse appear	s within the sweep expansion area.				
			Refer to figure 36				
		the MTR range handwheel expansion area which is the f	to center the range notch on the pulse within farthest out in range				
	d Set the	erange MAN-AID-AUTO st	witch to AUTO				
		The COORD DISPLAY	Y indicates between 216 and 276 yards.				
			Refer to figure 36.				
	e. Set the	range MAN AID-AUTO s	witch to MAN.				
	f. Set the	BURST ORDER switch to !	NORMAL.				
8.	Check the a	ssigned battery code pulse sp	acing.				
	a On the	coder contro, panel, set the	BATTERY CODE switch to the assigned code				
	b. On the switch	MTR RSPU, set the BEACO	ON DELAY switches to 0000 Depress the ENT				

(L) Table 4-18. Monthly Rador Coder Cheeks-MTR: Continued

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			COMPLETE			
Step	Caecasion	vormal sodies	ion	Corcective	procedure	
8.	Continued					
	c Adjust the		handwheel to o	enter the rang	notch on the pul	se crosest in
			AUTO switch	to AUTO		
	e On the A	ITR RSPU, ad	ust the BEAUC the COORD D	N DELAY swi	tches and moment es 0 yards	ar.ly depress
	f Set the ra	ange MAN-AII	—AUTO switch	to MAN		
	g Adjust th	e MTR range h	and wheel to cer	eter the second	pulse in the range :	notch .
	h Sat the n	ange MAN-AH	-AUTO switch	to AUTO		
					n 30 yards of the k only assigned bat	
		Battery		Battery		
		code	Range	code	Range	
		1	328	9	2,295	
		2	410	10	2,877	
		3	820	11	2,787	
		4	902	12	2,869	
		5	1,311	13	8,279	
		6	1,393	14	3,361	
		7	1,803	15	8,770	
		8	1,885	16	3,852	
				Rei	fer to figure 36	
	i. Set the r	ange MAN-AI	D-AUTO swite:	h to MAN		
9	Deenergize th	e MTR transmi	tter			
	Rotate the F OFF switch	IV SUPPLY k	nob fully coun	terelockwise a	nd depress the H	/ SUPPLY-
10.	Reestablish th	e switch positi	ońs,			
	a. On the n	nissue track cor	trol power supp	ly, set the AG	C-MANUAL switch	h to AGC
	ð. On the n	nissilė error vol	tage monitor, se	t the PRESET:	switch to 1.	
	c On the		anel, set the PF		tch to NORMAL as	nd the COM
			the BEACON I		s to the setting not	ed in step 4d

11 Reestabush the computer status.

Notify the computer operator that the checks have been completed

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(U) Table 4-18.1 Monthly Acquire and Command Checks-MTR

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Sep	Katherin in 18	Norma indication	izer - e procedure	
	Perform the	procedures in table 3-13,		

(U, Table 4-18-2 Monthly Track and Reject Checks MTR

		UN	GLASSIFIED
Step	Operation	Normas intigration	Corrective procedure
1.	Prepare fo	or the MTR track and reject	et checks
	a Perf	form the procedures in Tab	he 2-1.1
	6 O t	the the said denon consto-	greap, yer fy that the TEST switch is set to TEST.
	c. On t	the TTR IF test generator,	set the switches as indicated
		Switch	Setting
	OSC	;	OFF
	MOI	_	C₩
		ARSE IF FREQ ADJUST	0
		dB ATTENUATOR ab ATTENUATOR	0
			tor, disconnect F128 from J4 ATT OUT. Conject a T to J2 TES2 on the MTR sum main IF amplifier.
		the mass le maro ma SILE switch is set to STAI	ator group, verify, that the TARGET STANDBY NDBY
	f On t	ine miss le track hintrol di	rawer, set the switches as indicated
		Switch	Setting
	TES	at .	TEST
	DIS	ABLE	down
		N-AID-AUTO (all)	MAN
	REJ	ECT (m	omentarily depress)
	g On to O		power supply, set the back panel OVERRIDE switch
	h On I	the missile track indicate	r, rotate the SIGNAL LIGHTS knob fully clockwise
2.	Prepare ti	be computer for the MTR.	track and reject checks.
			erform the procedures in b through f below
		rgize the computer as pre	serbed in the dally power checks in TM 9 1430 1251

¹ Omit this step if the checks in the preceding tables have been performed in sequence

(U) Table 4-18.2. Monthly Track and Reject Checks MTR-Continued

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		UNCLA	
Sirp	Operation	Normal andreasion	Cortes in procedure
2	Continued		Livered GD
		eyboard/display, enter 7 a	nd depress CA
		SC and depress CR	
		LR and depress CR	
1		T and depress CR.	. An Ann at comp
3.	Check the loc	al designate and missile rea	ry that the LOCAL DESIGNATE and the MISSILE
	a On the READY	switches are set to off (do	WTL)
		On the missile track in lights are not illumina	ndicator, the SECTION and LAUNCHER indicator ted
			Refer to figure 43 m TM 9-1430- 1254-20/2
*	78	On the missile contro ack FIRE, LAUNCH and amber indicator lights	I-indicator group, the green DESIGNATE, READY, BR RST indicator lights are not illuminated. All are illuminated.
			Refer to figure 43 in TM 9-1430- / 1254 20/2
	b Set the	LOCAL DESIGNATE sw.	ch to the on up) position
	c. On the	missile track indicator, d	epress any single SECTION pushbutton and single
		The green DESIGNA	ATE indicator light is illuminated. The correspondight is extinguished.
			Refer to figure 43 in TM 9-1430- 1254-20/2
		The selected SECTION	ON and LAUNCHER indicator lights are illuminated.
		• • • • • • • • • • • • • • • • • • • •	Refer to figure 43 in TM 9-1430- 1254 20/2
	d. Set the	MISSILE READY switch	to the on (up) position
			ndicator light illuminates. The corresponding amber
			Refer to figure 44 in TM 9-1430- 1254 20/2.
4.		MTR antenna.	
	switch	After the antenna stops	wer, operate and hold the LAUNCHER ACQUIRE slewing, record the elevation and azimuth LED indi-
	cation	s on the missile track indi-	cator Continue to hold the LAUNCHER ACQUIRE

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Operation

Continued

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(U. Table 4-18-2. Monthly Track and Reject Checks-MTR-Continued

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6 On the MTR azimuth equipment enclosure, set the ANTENNA switch to DISABLE.

Corrective procedure

Norma indication

	0	On the WIR azanda equipment enclosure, see the ANTMONE SWITCH to DESCRIBE
		On the radar power control-indicator the three MISSILE-350V fuse indicator lights on the fuse panel are illuminated.
		Refer to figure 24
	d	Release the LAUNCHER ACQUIRE switch
		The elevation and azimuth LED indications are within 5 mus of the indications recorded in a above.
		Set the ANTENNA switch to NORM AL. Repeat step 4
Б	Che	rk for obtaining TRACK status with large signal levels.
	а	On the missile track control drawer, set the TEST switch to operate down)
		The green TRACK indicator light on the missile control-indicator group does not illuminate.
		(1) Refer to figure 34. (2) Refer to figure 45 in TM 9.1430- 1254-20/2
	ъ.	On the TTR IF test generator, set the OSC switch to ON
		The green TRACK indicator light illuminates. The corresponding amber indicator light extinguishes.
		(1) Set the ANTENNA awitch to NORMAL Repeat the procedures in step 4.
		(2) Refer to figures 17 and 34
		(3) Refer to figure 45 in TM 9-1430- 1254-20/2
6.	Che	ck for conditions which determine TRACK status.
	а	While observing the RECEIVED SIGNAL meter on the muscle control-indicator group, set the 0.9 dB ATTENL ATOR and 0.90 dB ATTENUATOR switches on the TTR IF test generator to obtain a meter indication of approximately 2. Record the switch settings
		The green TRACK indicator light on the missile control-indicator group has extinguished
		(1) Perform the procedures in table 3-13.1. Repeat steps 5 and 6
		(2) Refer to figures 17 and 34
		(3) Refer to figure 45 in TM 9-1430-

1254 20/2

tt., Table 4 1x * Monthly Track and Reject Checks MTR—Continued
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q.	Oper	dotable: famor North		Cr previsve pracedure
5	Con	tinued		
	b	Depress of	ae TRACKED pushbutton	on the missile control indicator group
			The green TRACK indi	cator light illuminates.
				Refer to figure 45 in TM 9-1480 1254 20 2
- 1	ε'	Depress J	be REJECT pushbutton on	the missile contragancicator group
				cator light extinguishes.
				Refer to figures 45 and 46 a TM 9-1430-1254-20/2
	ct	Set the 0-	9 dB AT FENL ATOR and	0 90 aB ATTENUATOR switches to 0
- 1			The green TRACK indi	
				(1) Refer to figure 84
				(2) Refer to figure 45 in TM 9-1430 1254-20/2
	f	On the p	missile track control power	supply, set the OVERRIDE switch to OFF an
			The red OFF FREQ in	dicator light momentarily illuminates
				Perform the procedures in table 5-1 If the MTR antenna position is change set the ANTENNA switch to NORMA and repeat the procedures in step 4.
			The green TRACK and	cator light momentarily extinguishes.
			The Merry server	Refer to figure 34
1	g		MISSILE READY switch	on the missile track indicator to off and then t
		4.1. (4.2.1.2	The green READY ar	d TRACK indicator lights on the missile control entarry extinguish and the corresponding ambi- itarily illuminate.
-				Refer to figure 44 in TM 9-143 1254-20/2.
	h	On the T	TR IF test generator, set ti	ne OSC switch to OFF
				icator light extinguishes.
				Refer to figure 34
	t		DISABLE switch on the mile (down).	issue track control drawer to DISABLE and the
			The green TRACK md	icator light momentarily illuminates
			B	Refer to figure 34

(U, Table 4-18.2 Monthly Track and Reject Checks—MTR: Continued
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Siep	в рега	oli e	Normal rice a ion	Corrective procedure		
6.	Cont	Inued				
	1	Set the C	SC switch to ON			
- 1			The green TRACK indic	ator light illuminates.		
				Recheck antenna position per the normal indication in step 46		
7.	Chec	k for effe	ects of fire command on reje	ct time intervals.		
	а		serving the green TRACK t the OSC switch on the TT	ndicator light on the mass e control indicator R IF test generator to OFF		
				icator light extinguishes after a noticeble delay feer operation of the OSC switch		
				Refer to figure 34,		
	h	Set the C	SC switch to ON,			
	The green TRACK indicator light illuminates.					
				Recheck antenna position per the normal indication in step 4c		
	c	Have the CR on th	the fire command by entering 5 and depressing			
			On the missile control- illuminates. The corresp	indicator group, the green FIRE indicator light conding umber indicator light extinguishes		
				Refer to figure 44 in TM 9-1430- 1254-20/2		
	d	While ob	serving the green TRACK in	dicator light, set the OSC switch to OFF		
			The green TRACK inc seconds after the OSC st	dicator light extinguishes within two to four witch is set to OFF		
				Refer to figure 34		
	e	Set the O	SC switch to ON			
			The green TRACK indic	ator light illuminates.		
,				Recheck antenna position per the normal indication in step $4c$		
8	Chec	к for part	al bypass of TRACK status	ercuit by the launch command.		
ŀ			TR IF test generator 0.9 d to the settings recorded in st	B ATTENUATOR and 0.90 dB ATTENUATOR ep 6a above.		
			The green TRACK indx is not illuminated	cator light on the missile control indicator group		
				Refer to figures 17 and 34.		

(U) Table 4 18.2. Monthly Track and Reject Checks-MTR: Continued

Styp	Conta	IOD	N time and a n	Corrorave proceduce		
B.		mued				
	ь	Have the	e computer kcyboard/dis			
			The green TRACK ar indicator group illumentinguish	id LAUNCH indicator lights on the missile control- nimate. The corresponding amber indicator lights		
- 1				Refer to figure 34		
9	Chec	k to verify	y that the burst command	i cancels TRACK status.		
	а	clave the	e impilter operator selec e computer keyboard/dis	t the burst command by entering 15 and depressing		
			The green BURST in Juminates. The corr	dicator light on the missile control indicator group esponding amber indicator light is extinguished.		
				(1) Refer to figure 34		
				(2) Refer to figure 52 in TM 9-1430- 1251-12-3		
			The green TRACK in extinguishes	idicator light on the missile control-indicator group		
- 1				Refer to figure 34		
	h		computer operator clear e computer keyboard/dis	the discrete commands by entering @ CR and CLR play		
			The green FIRE, L/control-indicator grou	UNCH and BURST indicator lights on the missile ap are extinguished,		
				Repeat step 9b		
10	Check operation of 1F attenuator and verify that TRACK status occurs only at design LPU coordinates.					
	a.	On the m	ss: e track control draws	r, set the TEST switch to TEST		
	ь	On the N	TR azimuth equipment	enclosure, set the ANTENNA switch to NORMAL		
				control-indicator, the three MISSILE-350V fuse e fuse panel extinguish.		
				Refer to figure 24		
	с	approxim	rately 100 mus greater th	elevation and azimuth to obtain LED indications an each of those recorded in step 4g above		
	d	Set the A	NTENNA switch to DIS	ABLE		
			The three MISSILE-	350V fuse indicator lights illuminate		
				Refer to figure 24		

(U) Table 4-18.2. Monthly Track and Reject Checks -MTR-Continued

Stup	Opera ion	Normal mulcision	Corrective procedure			
0	Continued					
	e On the TTR IF test generator set the OSC switch to OFF and set the 0.9 dB AT TENUATOR and 0.90 dB ATTENUATOR switches to 0					
	f Wh. e	observing the RECEIVED S set the TEST switch to operate	SIGNAL meter on the missue control-indicate te (down)			
			VAL meter indication decreases. (It may read			
			Refer to figures 17 and 34			
		The green TRACK ands does not illuminate.	cator light on the missile control-indicator grou			
1			Refer to figure 84			
	g, Set th	e OSC switch to ON				
		The green TRACK indi	cator light does not illuminate.			
		J	Refer to figure 34 (Check rela amplifier carcuit.)			
	Note: To prevent drifting of the antenna, step t below should be performed immediately after the green TRACK indicator illuminates a step h					
- 1	h. Set th	e ANTENNA switch to NORM	IAL			
	The three MISSILE-350V fuse indicator lights extinguish					
			Refer to figure 24			
		The green TRACK indi	cator light illummates.			
			Refer to figure 34. (Check rele amplifier circuit)			
	د Set tl	e TEST switch to TEST				
11	Return the system to normal operation					
	a On the TTR IF test generator, set the OSC switch to OFF and the 0-90 dB ATTENUATOR switch to 90					
	b Remove the coaxial cable from J2 TEST on the sum main IF amphifier and J4-A1 OUT on the TTR IF test generator Reconnect P128 to J4 ATT OUT					
		he missile track indicator, set hes to the off (down) positions	the MISSILE READY and LOCAL DESIGNAT			
	d On th	ie missile track contro, power s	supply, set the OVERRIDE switch to OFF			
	e Notif	y the computer operator that t	the checks have been completed			

fU; Table 4.19 Monthly Transmitter Checks-TRR

Step	Ope	ration	Normal indication		Corrective procedure				
1	Per	Perform the procedures in table 2-22, steps 1 through 3, and table 3-14, steps 3 through 7							
2,	Ch	Check the high voltage limiters.							
	а	Operate th	e MAG A switch to MOI	HV, and	Frotate the MOD A HV knob for y clock				
			The MAG A meter a green block.	ndication	does not exceed the right edge of the				
					Perform the modulator A procedures in table 5-27				
					Refer to figure 87				
	ь		e MAG A switch and roller of the green block on i		10D A HV knob to obtain an indication. A meter				
	C.		AG SEL switch to B						
	d	Operate th	e MAG B switch to MOI	OHV, and	I rotate the MOD B HV knob fully a ock				
			The MAG B meter ind block.	oes not exceed the right edge of the green					
					Perform the modulator B procedures in table 5-27				
					Refer to figure 87.				
	e,	Release the	MAG B switch.						
3.	Ch	eck the transi	mitter interaction in shor	t pulse.					
	а	On the tar	rget track control-power	supply,	set the TRR PULSE WIDTH switch to				
	a l	On the cou	ntermeasures control and	licator, se	t the MAG SEL switch to A				
	b	b Adjust the MOD A HV knob maximum counterclockwise. Quickly rotate the knifully clockwise, then counterclockwise until the MAG A meter indicates in the cuter of the green block.							
			The indication of the needle width	MAG B	meter does not change more than one				
					Refer to figure 73.				
	C.	Set the MA	G SEL switch to B. Rep	eat & abo	ve				
	ĘĹ		then counterclockwise.		lockwise. Quickly totale the knob fully MAG B meter indicates in the center of				
			The indication of the needle width	MAG A	meter does not change more than one				
					Refer to figure 73				
	e.	Set the MA	G SEL switch to A. Rep	eat d abo	ve.				

(U) Table 4-19 Monthly Transmitter Checks-TRR Continued

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, pera	10#	votes aucent a	Corrector pro edure		
Pren	ure for th	e IRR transmitter revers	e current circuit checks.		
		and they be the	ne range RF control power supply group set the IOD HV and the PULSE switch to LONG		
Check the modulator high voltage reduction.					
	e The Ma	AG A and MAG B mete a do a	not have sed a markings i in order to establish zero references efore high victuage is turned on		
a	On the	Countermeasures controlle MOD \ H\ Knob to	indicator, depress the MAG A. HV ON switch an obtain an indication in the center of the green blue		
b	Depress	the MAG B. HV ON st	witch and adjust the MOD B HV knob to obtain a een block on the MAG B meter		
¢.	Jan a a	heaving the TEST MEI	ER indication on the meter control indicator use i TP2 on the dc amplifier to ground		
		While TP2 is cont one-fourth scale or l	sected to ground, the TEST METER andication		
		220 17	Refer to figure 73		
ď	HV		, set the TEST METER switch to TRANS B-MO		
e	While o	bserving the TEST METI onnect TP5 on the dc am	R indication on the meter control indicator, mome pliffer to ground.		
		While TP5 is conne	ected to ground, the meter indication is one-four		
			Refer to figure 73.		
Che	sck the m	odulator A reverse curre	ent circuit.		
sho	uld be c e the ma	ontinually aware of the gnetrons are energized.	ocedures in this step, personnel located at the anten dangerous high voltage present in the modulator a		
а	knobs OFF sv	fully counterclockwise witches.	of indicator, rotate the MOD A HV and MOD B I Depress the MAG A HV OFF and MAG B-F		
b	shield i	from the modulator	etrons are turned off remove the clear plastic insular		
€ ^b	and gro	ound. Be careful not to n	erminal C of the modulator A pulse forming netwo nake contact with any other terminal		
d	an b ab	ove	crews, temporarily install the plastic shield remov		
€	Conne contro twe)	ct a dc voltmeter betw l-power supp ; group (een TB13-127 (+) and ground (-) in the range The expected voltage is approximately 68 vo.ts p		

(L) Tubic 4-19. Monthly Transmitter Checks-TRR -Continued

Opera	ation Normal indication	Consecuse procedur-			
Continued					
f	On the countermeasures contro to MOD HV	endicator, operate and to come MAG Ameter, with			
el-	Depress the MAG A-HV ON aw	itch			
h		ster and the collimeter, so we yerotate the $M(\Omega)$ A AV as position, then to the maximum counterclock use			
	The maximum volt	meter indication is between +64 and +75 volts.			
	The MAG A mete	r indication does not exceed one third of full scale			
		Refer to figure 73.			
L	Disconnect the voltmeter connect	cted in e above.			
Che	ck the modulator B reverse currer	it circuit.			
Repeat the procedures in step $6b$ through , above, substituting B for A and IB1.13 for TB13-127					
Deenergize the TRR transmitter.					
а	Rotate the MOD A HV and MOI	D.B. HV. knobs fully counterclockwise			
b.	Depress the MAG A-HV OFF st	witch			
	The indication on needle width	the MAG 8 meter does not change more than one			
		Refer to figure 78.			
C.	Depress the MAG A HV ON sw	itch			
d	Depress the MAG B-HV OFF st	vitch			
	The indication on needle width.	the MAG A meter does not change more than one			
		Refer to figure 73			
e.	Depress the MAG A: HV OFF st	witch			
Retu	-				
a	After verifying that both magn the test lead Remstal the plast	etrons are turned off, remove the plastic shield and ic shield			
b	On the meter control indicator,	set the PEST METER switch to OFF			
e		set the BLOWER switch to ON and the ANTENNA			
	Conf f f f h Che- Rep for ' Dee: a b. c. d. Retx a	Continued f On the countermeasures contro to MOD HV g Depress the MAG A—HV ON sw h White observing the MAG A ma knob to the max mum clocky, position The maximum volte The MAG A meter L Disconnect the voltmeter connect Check the modulator B reverse current Repeat the procedures in step 6b to for TB13-127 Deenergize the TRR transmitter, a Rotate the MOD A HV and MOI b Depress the MAG A—HV OFF so The industion on needle width c. Depress the MAG A—HV OFF so The industion on needle width. e. Depress the MAG A—HV OFF so The industion on needle width. e. Depress the MAG A—HV OFF so The industion on needle width. c. Depress the MAG A—HV OFF so The industion on needle width. c. Depress the MAG A—HV OFF so The industion on needle width. c. Depress the MAG A—HV OFF so The industion on needle width. c. Depress the MAG A—HV OFF so The industion on needle width.			

(U) Table 4.20. Monthly Ferrite Switch Checks-TRR

5tep	Obuttr	ion Hormic and cation	Corrective procedure			
1.	Prepare for the ferrite switch checks.					
	a	Perform the procedures in table 2-1.1				
	ь	Have the LOPAR operator select the LOP.	AR mode of operation			
	c	On the range radar power control indicato	r set the REC INPLT switch to ANT			
		On the range autenna support base, set the Set the BLOWER switch to OFF	ANTENNA switch to DISABLE			
	f	Using the FREQ switch on the meter con-	rol indicator in the range RF control-power F5 Leave the ft NING TRANSMITTER			
	g	On the RF power test set set the SCALE-	db switch fully clockwise.			
		Calibrate the RF power test set by perfo	rming the procedures in table 3-14, step 65			
		On the meter control indicator, set the 'MAN-PAN NO LOSS switch to MAN, and	TRANS ON ANT switch to B, the At TO- d the PULSE switch to LONG			
2.	Perform the ferrite switch checks,					
			or depress the MAG A HV ON switch in indication in the center of the green block			
	ь.	On the ferrite switch driver assembly, se the ADJ C-NORM switch to NORM	t the ADJ A NORM sw tch to ADJ A and			

^{*}Omit this step of the checks in the preceding tables have been performed in sequence

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(U) Table 4 20. Monthly Ferrite Switch Checks-TRR -Continued

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ep.	ı per	4 105 Suema indication Corrective procedure
2.	Cor	statued
	с	On the ferrite switch driver assembly momentarily hold the TEST ADJ B. OPERAT switch in the TEST/ADJ B position.
		The RF power test set meter indication is between = and 6 db
		Perform the procedures in table 5-23
	d	Using the FREQ switch on the control indicator, tune magnetron A to F3 Set to TUNING TRANSMITTER switch to REMOTE
	€.	On the RF power test set, set the ADJ MEAS switch to V.
	f	On the meter control indicator, set the TRANSON ANT switch to A and the AUTO MAN-PAN NO LOSS switch to PAN NO LOSS.
	E	On the RF power test set, set the ADJ MEAS switch to MEAS
	h	On the ferrite switch drawer assembly, set the ADJ A NORM switch to NORM at the ADJ C-NORM switch to ADJ C.
	t	Momentarily hold the TEST ADJ B-OPERATE switch in the TEST ADJ B position
		The RF power test set meter indication is between - and 6 db.
		Perform the procedures in table 5-23
	3	On the countermeasures control indicator, rotate the MOD A HV knob fully counterclockwise and depress the MAG A—HV OFF switch.
- 1	k	On the meter control indicator, set the AUTO-MAN PANNO LOSS switch to MAN
	1	On the countermeasures control indicator, depress the MAG B-HV ON switch adjust the MOD B HV knob to obtain an indication in the center of the green bloc on the MAG B meter.
	m	On the ferrite switch driver assembly, set the ADJ C-NORM switch to NORM Momentarily hold the TEST ADJ B-OPERATE switch in the TEST ADJ B position
		The power monitor indication is between ∞ and 6 db.
		Perform the procedures in table 5-23
	п	On the countermeasures control indicator, rotate the MOD B HV knob fully counter clockwise and depress the MAG B—HV OFF switch.
	Retu	um the TRR to normal operation,
	æ	On the RF power test set, set the ADJ MEAS switch to V and the SCALE $^{\circ}\text{db}$ switch to 0
	b	Set the BLOWER switch to ON and the ANTENNA switch to NORMAL

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Step	Operation	Mormal Indication	Corrective procedure		
1	Perform the	daily target AFC check proce	edures in table 2-23, steps 1 through 2f		

U, Table 4.21 Monthly Target AFC Checks—TBR: Continued UNCLASSIFIED

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Step	€ pe	talion Normal muradon	Come are procedule				
2	Prepare for additional checks.						
	æ,	a. At the range antenna support base, set the ANTENNA switch to DISABLE and the BLOWER switch to OFF					
	 On the meter control-indicator, set the switches as indicated. 						
		Switch	Setting				
		TUNING TRANSMITTER	A FAST				
		PULSE	SHORT				
		TRANS ON ANT	A				
		AUTO-MAN-PAN NO LOSS	MAN				
	с	Operate and hold the FREQ switch on the meter control indicator to DCR until the					
	tuning drive motor for magnetron A stops						
	đ.	Set the TUNING TRANSMITTER switch to B FAST					
	e,	e. Repeat c above for magnetron B.					

3 Check the A channel crystal current and local oscillator (VTO) output

Set the XTAL CURRENT switch to each posit on from RCVR A: CR1 through CR8

The XTAL CURRENT meter indicates a steady value between 40 and $100~\mu a$ for each position.

- (1) Select the XTAL position with the highest indication on the XTAL CURRENT meter Adjust AT3 on the associated frequency mixer to bring the indication to full scale. Repeat a above.
- *(2) If the XTAL CURRENT meter indication is 0 for several positions, ascertain that the crystals are good If the crystals are bad, replace the associated TRL and install new crystals

On the A target AFC, the AFC LOCK indicator is illuminated

Perform the procedures in table 5-22

- Set the XTAL CURRENT switch to RCVR A-CR5
- c. Set the TUNING TRANSMITTER switch to A SLOW.
- d Operate and hold the FREQ switch to iNC until the tuning drive motor on magnetron A stops

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Step	Operation	Normal sudication	Corrective procedure			
3.	Continued					
		The ATAL CURRENT	meter indicates a steady value between 40 and			
			If necessary, adjust ATS on the A frequency mixer			
		The AFC LOCK indicat quency is varied.	tor is dimminated and steady as the magnetron fre-			
			Perform the procedures in table 5-22			
	e Repeat t	the procedures in a above				
	/ E AT8 v	waa adjusted, repeat a throug	th e above			
	g. Operate	and hold the FREQ switch t	to DCR to tune the magnetron near minfrequency.			
4.	Check the B channel crystal current and local oscillator (VTO) output.					
	a Set the	FRANS ON ANT switch to I	В.			
		step 3 above, substituting B	for A.			
Б.	Check the AFC lock-on channel,					
	a On the A	A target AFC, remove the co	axial cable from J3-IF IN			
		The AFC LOCK indicat	or extinguishes.			
			Refer to figure 74,			
	b Reconne	ect the coax,al cable to J3-IF	'IN			
		The AFC LOCK indicat	or illummates.			
			Refer to figure 74			
		and b above for the B targe	t AFC.			
6.		RR to normal operation.				
		CTAL CURRENT switch to				
		FUNING TRANSMITTER 81	witch to REMOTE			
		BLOWER switch to ON				
	d Set the ANTENNA switch to NORMAL.					
7,		e TRR transmitters.				
			HV knobs fully counterclockwise			
	b Depress	the MAG A HV OFF and M	IAG B HV OFF switches.			

(U) Table 4-22 Monthly Rungs Synchroniaer Standby Chechs-TRR UNCLASSIFIED

Stop	Operation	Norma indication	Corrective procedure			
1.	Prepare for the synchronizer standby checks.					
	a. Have ti	he LOPAR operator select th	e LOPAR mode of operation			

(U) Tobis 4.22. Monthly Range Synchronizer Standby Checks-TRR-Continued

Stop	Opera	t so N	Normal ration is n	Cater over atmosfute		
1	Continued					
	h	On the	te PULSE switch to SHOR!	of indicator set the TEST OPHRAFE switch to and the MAN AUTO switch to MAN.		
	ť	Insure to	hat the MP-OFF indicate the target PLATE VOLTS	or on the puise generator indicator is Jiuminak switch is set to ON		
- 1	d	On the c	ountermeasures control ind	heator, depress the VAGIA HVICN switch		
	e	on the V	IAG A meter	otain an indication in the center of the green blo		
2	Perf		ynchronizer standby check			
	а b.	On the t Set the t	arget track contro-power's arget PLATE VOLTS swite	upply, set the IND HV sw tch to OFF		
			The indication on the block.	MAG A meter remains in the center of the gre		
				On the range synchronizer, adjust t FREQUENCY LOPAR—SHORT PUL		
				variable resistor		
				Refer to figure 72.		
	C,	Set the I	PULSE switch to LONG			
			The indication on the block	MAG A meter remains in the center of the gro		
				Adjust the FREQUENCY—LOPAI LONG PULSE variable resistor Refer to figure 72		
	d	Have the	e LOPAR operator se ect th	ne HPAR mode of operation		
				MAG A meter remains in the center of the gre		
				Adjust the FREQUENCY HIPAI LONG PULSE variable resistor		
				Refer to figure 72.		
	€.	Set the	PULSE switch to SHORT.			
			The indication on the block	MAG A meter remains in the center of the gro		
				Adjust the FREQUENCY HIPAI SHORT PULSE variable resistor Refer to figure 72		
	1	Set the	TARGET PLATE VOLTS	switch to ON		
	g.	Set the	IND HV switch to ON			
3	Dee	nergize tl	be TRR transmitter			
	E,	Rotate	the MOD A HV knob fully	counterclockwise,		
	b.	Depress	the MAG A-HV OFF sw.	tch,		

(U. Toble 4 22.1 Months to age System Checks-TRR

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Step	Ppersonn	Normal and a co	Corrective procedure
	Herform the	procedures in table 2-24	

(U) Table 4-23. Monthly Lin Log Receiver Checks-TRR

LINCLASSIFIED

			UNC	CLASSIFIED			
Step	Jineradi	on	Normal no da i en		Corrective procedute		
1.	Prepa	Prepare for the lin-log receiver checks.					
	a i	a Perform the procedures in table 2-1.					
	b (On the rai	ige radar power conti	ro ndicator, s	et the switches as indicated		
		Swi	tch	Setting			
	1	TEST-O	ERATE	TEST			
		MAG SEI		A			
		RANGE 2		OFF			
		AUTO-N	IAN	MAN LONG			
		PULSE RADAR (2 A IN	LIN-LOG			
		REC INP		ANT			
	1						
2		Energize the A transmitter.					
		a On the countermeasures control indicator, rotate the MOD A HV knob fully counter clockwise and depress the MAG A-HV ON switch.					
		6 Adjust the MOD A HV knob to obtain an indication in the center of the green block on the MAG A meter.					
3.	Check	Check the voltage amplitude of the transmitter pulse.					
		a On the target ranging radar control, connect a test cable between the TRR VID ack and the vertical input of the test oscilloscope					
		The transmitter pulse amplitude is between +4 25 and +4.75 volts.					
					Perform the procedures in table 5-24		
	ь	Disconne	ct the test cable from	the TRR VID	,ack and from the test oscilloscope		
4.	Perfo	an the p	ocedures for observa	ng the TTR or	TRR transmitter pulse		
		Note: Perform this step only if the complete transmit er pulse is not visitle on the indicators. It may be necessary to increase antenna elevation to reduce ground cluster in order to make the pulse visible.					
	ø.	On the ta	rget track control po	wer supply, set	t the IND switch to R		
	ь	Set the T	TR range to approxi	nately 15,000	yards.		

¹ Omit this step if the checks in the preceding tables have been performed in sequence.

it , Table 4 23. Monthly Lin Log Receiver Checks-TRR Continued

UNCLASSIFIED

		CHOL	7001112			
5 ep	(peration	Normal inducation	Corrective procedure			
4.	Continued					
	e. On the	TTR RSPU, set the switch	hes as inducated.			
		Switch	Setting			
		OPROCESSOR SELECT ADDRESS	MNI PC5 9801 3 LP 0,1,2,47 DOWN			
	d Mome	ntarily depress the WRITE	DATA switch			
		The transmitter pul	se is visible on the TTR range indicator. Refer to figure 52			
5	Check the transmitter pulse amplitude on the target range indicator.					
	a. Obser	a. Observe the lower sweep of the TTR target range indicator.				
	1	The transmitter pul	se amplitude is between 1-1/4 and 1-1/2 inches.			
			On the TTR RSPU, adjust A23 R4			
			Refer to figure 52			
	b If the		ve were performed, set the TTR RSPU MODE switch			
6	Deenergize	the A transmitter				
		intermeasures control indi- epress the MAG A. HV OF	cator, turn the MOD A HV knob fully counterclock- F switch,			
7.	Perform to	e daily lin-log receiver chec	ь procedures in table 2-25.			

(U) Table 4-24. Monthly Panoramic Receiver Checks-TRR

Step	Operati	na Normal audiention	Corrective procedure
1.	Prepa	re for the panoramic receiver ch	necks.
	a. I	erform the procedures in table	2-1.3
		On the range radar power co TEST and the NOISE OUTPUT	ntro. indicator, set the TEST OPERATE switch to switch to PAN.
		At the range antenna support I BLOWER switch to OFF	pase, set the ANTENNA switch to DISABLE and the
2.	Check	the PAN receiver crystal curre	nt.
		On the range RF control power o CR1 and then to CR2	r supply group, set the XTAL CURRENT SEL switch

Omit this step if the checks in the preceding tables have been performed in sequence

(U) Table 4 24 Monthly Panoramic Receiver Checks-TRR Con ward

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Step	Operation	Normal indication	Corrective procedure
2.	Continued		
		The PAN XTAL CUR! ma for each position	RENT meter indicates a value between 0.5 and 3.0
			In the panoramic frequency mixer, adjust variable attenuator AT4 for a current of 1 ma for the crystal with the ower indication
			Refer to figure 75
	b. Set the	XTAL CURRENT SEL swit	ch to OFF
	c. Set the	BLOWER switch to ON and	the ANTENNA switch to NORMAL
3	Perform the	dady panoramie receiver che	ck procedures in table 2-26.

(U, Table 4 24.1 Monthly Countermeasures Control-Indicator Checks-TRR

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Step	Operation	Normal indication	Corrective procedure
	Perform the	procedures in table 3-15	

(U) Table 4 25. Manthly Automatic Channel Selector Checks-TRR

Step	Ope	untlon	Normal indication	Corrective procedure
1	Pre	pare for ti	ie automatic chann	el selector (ACS) checks,
	a.	Perform	the procedures in t	able 2-1.
	Ó	On the r	ange radar power c	ontrol-indicator, set the switches as indicated
			ritch	Setting
		TEST-C	OPERATE	TEST
		MAG SE	<u>CL</u>	B
		FREQU	ENCY A-B	В
		RANGE	ZERO	OFF
		AUTO-	MAN	MAN
i i		PULSE		LONG
			DUTPUT	RADAR
		REC IN	PUT	NOISE LAMP
	c	Operate 3.2 on ti	the FREQUENCY	DCR INCR switch to tune MAG B for an indication of eter,

Omit this step if the checks in the praceding tables have been performed in sequence

(U) Table 4-25. Monthly Automatic Channel Selector Checks-TRR: Continued

		CONTIDENT	
Sup	Operation	n Roymal indication	Corrective procedure
1.	Contu	ued	
	d S	et the MAG SEL switch to A and the F	REQUENCY A B sw tch to A
	e C	perate the FREQUENCY DCR INCI S on the FREQUENCY meter	Resetten to tune MAG A for an indication of
	f C	on the TRR IF test generator, verdy the	at the OSC switch is set to OFF
2	Check	the ACS logarithmic amplifier de balan	nce,
	ACS ur	rt unless otherwise indicated	s, movers, controls, and attenuovers are located on the
		On the ACS attenuator, note the switch han 60 db	h settings and then set the switches for greater
		et the ACS METER MONITOR switch	
	c A	fomentarity hold the ACS SENSITIVI	I'Y switch in the X10 position
		The ACS meter indicates b	etween 0 and 20.
			On the ACS logarithmic amputier, adjust the OUTPUT OFFSET control to obtain a meter indication of 10.
			Refer to figure 71 1.
	d (In the ACS attenuator, set the switches	· ·
_			
3.		the receiver noise power levels monito	
	a. I	fold the ACS SENSITIVITY switch in The ACS meter indicates b	
		The ACS meter indicates b	Set the ACS attenuator switches to ob-
			tain the required indication.
		The ACS attenuator switch	settings equal 30 db or greater.
i			On ACS linear IF ampafier A6 in the TRR receiver subassembly, adjust the GAIN ADJ control clockwise until a maximum indication is obtained on the ACS meter Repeat a above Refer to figure 71.1
	b 1	Note the ACS meter indication.	
		Set the ACS METER MONITOR switch	to A LEV
		The ACS meter indicates v	vithm 15 of the value noted in b above
			Refer to figure 71 1
	d. 1	Set the ACS METER MONITOR switch	to B LEV.
			vithin 15 of the value noted in b above.
			Refer to figure 71.1.
	e i	Release the ACS SENSITIVITY switch	3
	1	Witten	

U. Table 4-25 Monthly Automatic Channel Selector Checks-TRR: Continued

Step	Open	ation Sormal indication	Corrective procedure
4.	Che	ck the ACS threshold adjustm	ent.
	ø	On the range radar power of	ontro-indicator, set the NOISE OF TPUT switch to OFF
		The TEST 2 and	icator is extinguished (flickering is permissible)
			Perform the procedures in step 5 below.
	b.	Note the ACS attenuator sw	tch settings Remove 5 db.
		The TEST 2 and	icator is illuminated.
			Perform the procedures in step 5 below.
	С	Return the ACS attenuator's	witches to the settings noted in blabove
	ď.	Proceed to step 6 below	
5.	Set	the ACS threshold adjustment	
	а	On the range radar control (ndicator, verify that the NOISE OUTPUT switch is set to
	ь	Note the ACS attenuator swi	tch settings, remove 3 db
	С		DJ dua and rotate the THRESHOLD ADJ contro, clock- or is completely (iluminated ino flickering)
	ď		Of control counterclockwise until the TEST 2 indicator etc. Lock the THRESHOLD ADJ d.a.
	e	Reset the ACS attenuator sw	tches to the settings noted in b above
	T.	Repeat step 4 above.	
6	Che	ck the ACS balance adjustmen	t.
	а	On the range radar power co	introl-indicator, verify that the NOISE OUTPUT switch is

(U) Table 4-25 Monthly Automatic Channel Selector Checks-TRR-Continued

Step	Opera	tion Normal Indicati	¢m	Corre	ctive procedure
6.	Cont	nued			
		The TEST 1	indicator is illumina	ated (i	flickering is permissible).
				Perfe	orm the procedures in step 7 below
	b	On the range radar pow ON switch	er control-indicator,	, mom	entarily depress the NOISE LAMP
		The TEST 1	indicator extinguish	bes,	
					Perform the procedures in step 7 below
					Set the NOISE OUTPUT switch to RADAR and perform the pro- cedures in table 2.25, step 4, Re- peat step 6
					Refer to figure 71.1
	¢.	Proceed to step 8 below			
7.	Set t	he ACS balance adjustme	nt.		
	a .	- ,			he NOISE OUTPUT switch to OFF.
	b	Unlock the BALANCE the TEST 1 indicator is		BAL.	ANCE ADJ control clockwise until
	ę.				J position and rotate the BALANCE indicator just starts to extinguish
	₫.	Release the BALANCE s	witch and lock the E	BALA	NCE dal
	e,	Repeat step 6 above			
8,	Chec	k the dynamic range of t	he ACS unit.		
	a.	Note the ACS attenuator	switch settings Sei	t the s	witches to 0 db
		Repeat step 60 and b abo			
	с	Reset the ACS attenuato	r switches to the set	tangs i	noted in a above.
9.	Chec	k the control of magnetr	on selection by the A	ACS.	
	α	On the IF test generator,	set the switches as i	mdicat	ted:
		Setting	Switch		
		0-90 db attenuator 0-9 db attenuator MODE			
	ь	On the range radar power	r control indicator, s	et the	switches as indicated
		Switch	Setting		
		MAN-AUTO MAG SEL	AUTO B		

(L) Table 4.25 Monthly Automatic Channel Selector Checks TRR-Continued

Step	Oper	ation	Normal tadication	n	Conscitive precedure
9.	Cor	ntinued			
				indicator is illunun i extinguished,	ated (flickering is permissible). The TEST
					Repeat the procedures in table 4-25
					Refer to figure 71.1
			On the cour	ntermeasures contr the B SEL indicate	ol indicator, the A SEL indicator is illu- or is extinguished.
					Refer to figure 71.1.
	c.	On the I	F test generator.	set the OSC switch	to ON.
	d.	Note the	andication on	the BALANCE dia	l Unlock the BALANCE dual and rotate leater is extinguished
			The TEST 1	indicator is extingu	ashed.
					Refer to figure 71.1
			The TEST 2	indicator is illumin	nated.
					Repeat the procedures in table 4-25.
			On the cou	ntermeasures contr the A ShL indicat	ol-indicator, the B SEL indicator is illu or is extinguished.
					Refer to figure 71.1.
	£	Set the	BALANCE dud	to the position no	ted in d above and relock the BALANCI
10.	Re	establish ti	he switch positio	12.6,	
	a.	Set the	ACS METER MO	NITOR switch to	OFF.
	Ь		IF test generatoritch to OFF.	, set the 0-90 dB	ATTENUATOR switch to 90 dB and the
	c	On the r	ange radar contr	ol-indicator, set the	switches as indicated
		Su	iitch	Setting	
		TEST-C	OPERATE	OPERATE	
		MAN-A		MAN	
		MAG SI		A	
		REC IN	PUT	ANT	

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Lable 4 ? , Monthly Buresigh Checks THE UNCLASSIFIED

Step	Liperatuon	Normal indication	Cotass 426 barosquis	
		procedures in table 3 16		

L. Table 1, 25-2 Monints Telescope Coltimation Checks- IRR

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Step	Operation	Normal andication	Corrective p cedure	
	Perform the	procedures in table 3-17.		

tl. Table 4.95.3 Monthly Remote Studening Checks-TTR and TRR

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Step	Operation	Normal inducation	Corrective procedure	
	Perform the	procedures in table 3-18		

(C. Table 4-25-4 - Wonthly Trock Data Processor Checks

Step	Opezation	Normal inducation	Currective procedure	
	Perform the	procedures in table 3-19.		

(U) Table 4 26. Monthly Parallax Correction Checks-TRR

Step	Ope	valuat Normal indication	Corrective procedure			
		ote. The procedures in table 3.20 sures in this table. Disregard reference	steps 2, 3 and 5 mus, be performed before performing the pro-			
1.	Pre	pare for the parallax correction	checks.			
	a. Perform the procedures in table 2-1					
	b On the range radar power control indicator, sat the switches as indicated					
		Switch	Setting			
		TEST-OPERATE	TEST			
		RANGE ZERO	OFF			
		PULSE	SHORT			
		RADAR GAIN	L1N-LOG			
	c On the missile track control drawer, set the TEST switch to TEST					
	d	On the track data processor, v	erify that MODE SWITCH is set to TACTICAL			
2.	Ch	eck the operation of the TRR ra	nge parallax correction circuits.			
	a On the TRR IF test generator, set the switches as indicated					
		Switch	Setting			
		OSC	ON			
		MODE	PULSE			
		PULSE WIDTH	SHORT			
		SLEW RATE	Center (off) OFF			
		0-90 dB ATTENUATOR	40			
		0-9 dB ATTENUATOR	Õ			
	b. Remove couxial cable P19 from J6 on the TRR IF test generator Connect a coaxia cable from J6 to the TRR SYNC test jack,					
	c On the TRR IF test generator, momentarily operate the RANGE PRE-SET switch Set the COARSE IF FREQ ADJUST control to 0					
	d On the target antenna control group, set the RANGE TRACK switch to TRR and the MULTI BIN switch to ON					
	e	e On the TTR RSPU, set the COORD SELECT switch to D-FCN				
	f On the track data processor, set the N.S. E/W, and UP/DN TRR/TTR PARALLA. (YDS) switches to 00					
	g Set the TTR range to place the IF test pulse near the range notch					
	h On the target antenna contro. group, set the range MAN-ACQUIRE AID-TRACI AID-AUTO switch to ACQUIRE AID.					
	The 1F test pulse has been acquired.					
			Reacquire the IF test pulse.			

Omit this step if the cheeks in the preceding tables have been performed in sequence.

Step

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(U) Table 4-26. Monthly Parallex Correction Checks-TRR-Continued

Continued t. Position the TTR antenna elevation and azimuth to 800 0 m.ls J. Set the range MAN ACQUIRE AID—TRACK AID—AUTO switch to AUTO and not the range indication on the TTR RSPL COORD DISPLAY. Set the range switch of ACQUIRE AID & On the track data processor, set the TRR PARALLAX (YDS) switches as indicated. Note: Verify that the TEST—OPERATE switch on the range radar power control indicator is set. TEST Switch Setting N/S N/S E/W E 50 UP/DN UP 20 On the track data processor, the RUN indicator is illuminated, and of NON-TACTICAL indicator is not illuminated. Set the range MAN ACQUIRE AID—TRACK AID—AUTO switch to AUTO The TTR RSPU COORD DISPLAY indication is between 54 and yeards greater than noted in j above. (1) Perform the procedures in tak 5-29, steps 2n through 2h. (2) Check the 4250 volts on the rad range power control indicator (3) Check the operation of the TRACK AID—AUTO switch to ACQUIRE AID—REFE to figure 78.1. M. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in j above. Refer to the corrective procedure in above p. On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID—MAN IRACK AID—AUTO RANGE TRACK TTR MULTI BIN OFF	Oper	ation Sormal and	SCREEGE.	Corr	ective procedure			
Set the range MAN ACQUIRE AID—TRACK AID—AUTO swatch to AUTO and not the range andication on the TTR RSPL COORD DISPLAY. Set the range switch of ACQUIRE AID. Note Verify that the TEST—OPERATE switch on the range radar power control adicator is set TEST. Switch Setting. N/S N 50 E/W E 50 UP/DN UP 20 On the track data processor, the RUN indicator is illuminated, and the NON-TACTICAL indicator is not illuminated. Set the range MAN ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TTR RSPU COORD DISPLAY indication is between 54 and syards greater than noted in j above. (1) Perform the procedures in taktional states of the states of the range power control-indicator. (2) Check the 4250 volts on the radicator is not illuminated. Set the tange MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID. Set the tange MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in j above. Refer to the corrective procedure in above. P. On the target antenna control group, set the switches as indicated. Switch Setting MAN ACQUIRE AID— MAN ITRACK AID—AUTO TRACK AID—AUTO RANGE TRACK TTR	Con	itinued						
Set the range MAN ACQUIRE AID—TRACK AID—AUTO swatch to AUTO and not the range indication on the TTR RSPL COORD DISPLAY. Set the range switch of ACQUIRE AID. Note Verify that the TEST—OPERATE switch on the range radar power control indicator is set TEST. Switch Setting. N/S N 50 E/W E 50 UP/DN UP 20 On the track data processor, the RUN indicator is illuminated, and the NON-TACTICAL indicator is not illuminated. Set the range MAN ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TTR RSPU COORD DISPLAY indication is between 54 and syards greater than noted in j above. (1) Perform the procedures in taktional states of the state of the target range synchromizer. Refer to figure 78.1. Set the tange MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID. Set the tange MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in j above. Refer to the corrective procedure in above. P. On the target antenna control group, set the switches as indicated. Suitch Setting. MAN ACQUIRE AID—MAN ITRR MAN ITRACK AID—AUTO RANGE TRACK. TTR	Ł.	Position the TTR ant	enna elevation ai	ad azimuth t	to 800 0 m.ls			
Note Verify that the TEST-OPERATE switch on the range radar power control adicator is set TEST Switch Setting N/S N 50 E/W E 50 UP/DN UP 20 On the track data processor, the RUN indicator is illuminated, and to NON-TACTICAL indicator is not illuminated. Set the range MAN ACQUIRE AID-TRACK AID-AUTO switch to AUTO The TTR RSPU COORD DISPLAY indication is between 54 and yards greater than noted in j above. (1) Perform the procedures in table 5-29, steps 2x through 2h. (2) Check the +250 volts on the rad range power control-indicator (3) Check the operation of the Textaget range synchromizer. Refer to figure 78.1. **Set the tange MAN-ACQUIRE AID-TRACK AID-AUTO switch to ACQUIRE AID-TRACK AID-AUTO switch to AUTO.** The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in j above. Refer to the corrective procedure is above **P. On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID- MAN TRACK AID-AUTO RANGE TRACK TTR		Set the range MAN the range indication ACQUIRE AID	ACQUIRE AID- on the TTR RS	TRACK AL	D-AUTO switch to AUTO and not DISPLAY Set the range switch to			
Switch Setting N/S N/S E/W E 50 UP/DN UP 20 On the track data processor, the RUN indicator is illuminated, and to NON-TACTICAL indicator is not illuminated. Set the range MAN ACQUIRE AID—TRACK AID—AUTO switch to AUTO The TTR RSPU COORD DISPLAY indication is between 54 and yards greater than noted in j above. (1) Perform the procedures in table 5-29, steps 2n through 2h. (2) Check the +250 volts on the rad range power control-indicator (3) Check the operation of the Textaget range synchromizer. Refer to figure 78.1. M Set the tange MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in j above. Refer to the corrective procedure in above p. On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID— TRACK AID—AUTO RANGE TRACK TTR								
N/S E/W E 50 UP/DN UP 20 On the track data processor, the RUN indicator is illuminated, and the NON-TACTICAL indicator is not illuminated. Set the range MAN ACQUIRE AID—TRACK AID—AUTO switch to AUTO The TTR RSPU COORD DISPLAY indication is between 54 and yards greater than noted in j above. (1) Perform the procedures in takt 5-29, steps 2n through 2h. (2) Check the +250 volts on the rad range power control indicator (3) Check the operation of the TR target range synchronizer. Refer to figure 78.1. M Set the tange MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AID Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in j above. Refer to the corrective procedure in above D On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID— MAN TRACK AID—AUTO RANGE TRACK TTR			r-operate switt	th on the ran	ge radar power control adicator is set t			
E/W E 50 UP/DN UP 20 On the track data processor, the RUN indicator is illuminated, and to NON-TACTICAL indicator is not illuminated. Set the range MAN ACQLIRE AID—TRACK AID—AUTO switch to AUTO The TTR RSPU COORD DISPLAY indication is between 54 and syards greater than noted in j above. (1) Perform the procedures in takt 5-29, steps 2n through 2h. (2) Check the +250 volts on the rad range power control indicator (3) Check the operation of the TR target range synchronizer. Refer to figure 78.1. M Set the tange MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AI a Set the N/S, E/W, and UP/DN TRR PARALLAX (YDS) switches to S, W, and DN c. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in j above. Refer to the corrective procedure is above p. On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID— MAN TRACK AID—AUTO RANGE TRACK TTR		Switch	Setting					
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m Set the tange MAN—ACQUIRE AID—TRACK AID—AUTO switch to ACQUIRE AI n Set the N/S, E/W, and UP/DN TRR PARALLAX (YDS) switches to S, W, and DN o. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in 1 above. Refer to the corrective procedure is above p. On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID— MAN IRACK AID—AUTO RANGE TRACK TTR				(3)	Check the operation of the TR			
n Set the N/S, E/W, and UP/DN TRR PARALLAX (YDS) switches to S, W, and DN c. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in j above. Refer to the corrective procedure is above p. On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID— MAN TRACK AID—AUTO RANGE TRACK TTR					Refer to figure 78.1.			
c. Set the range MAN—ACQUIRE AID—TRACK AID—AUTO switch to AUTO. The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in j above. Refer to the corrective procedure is above p. On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID— MAN TRACK AID—AUTO RANGE TRACK TTR								
The TRR RSPU COORD DISPLAY indication is between 54 and yards less than noted in 1 above. Refer to the corrective procedure is above p. On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID— MAN TRACK AID—AUTO RANGE TRACK TTR								
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Refer to the corrective procedure is above p. On the target antenna control group, set the switches as indicated Switch Setting MAN ACQUIRE AID— MAN IRACK AID—AUTO RANGE TRACK TTR					I Didración la Desvetta de ana			
Switch Setting MAN ACQUIRE AID— MAN IRACK AID—AUTO RANGE TRACK TTR		,==		Re				
Switch Setting MAN ACQUIRE AID— MAN IRACK AID—AUTO RANGE TRACK TTR	p.	On the target antenn	a control group,	set the swit	ches as indicated			
MAN ACQUIRE AID— MAN IRACK AID—AUTO RANGE TRACK TTR								
		MAN ACQUIRE A TRACK AID-AU	tD I	MAN				

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(U) Table 4 28. Monthly Parallex Correction Checks-TRR-Continued

	0.40EX001(1ED			
Step	Operal	ion Normal Indication	Corrective proceduze	
2.	Cont	inued		
		On the TRR IF test generated by the test generated in babove. Rec	ilor, set the OSC switch to OFF and remove the coaxial onnect P19 to ${\bf J6}$.	
		On the range radar power OPERATE	control indicator, set the TEST OPERATE switch to	
	[Set the required site TRI switches.	t/TTR parallax on the TRR/TTR PARALLAX (YDS	
8.	Prepa	ere for the angle-parallax che	cks,	
	a.	Set the TTR range to approx	imately 15,000 yards.	
	b.	Position the TTR antenna el	evation and azimuth to 0 mis.	
		Remove the cap on the azir base and rotate the azimuth indicates 0 mils	nuth correction transmitter in the range antenna support adjustment knob until the BASELINE AZIMUTH DIAI	
		On the antenna control cor to 84 yards.	nputer, adjust the HORIZONTAL DISPLACEMENT dia	
4.	Chec	k the azimuth parallax corre	ction.	
	a.	On the antenna control com	puter, observe the SHORT RANGE indicator	
		The SHORT R.	ANGE indicator is illuminated	
			Refer to figure 89	
	b.	Observe the azimuth correct	gon transmitter	
		The AZIMUTI- between 6,399.	DIAL on the azimuth correction transmitter indicates 8 and 0,2 mils.	
			Perform the procedures in table 3-20 steps 2 and 5 through 8. Disregard any reference to the MTR	
			Refer to figure 76	
	c	Set the BASELINE AZIMU	TH DIAL to 4,800 mile.	
		The AZIMUTI between 5 and	I DIAL on the azimuth correction transmitter indicates 9 mile,	
			Refer to figure 76.	
	d	Set the BASELINE AZIMU	TH DIAL to 1,600 mils.	
		The AZIMUTE 6,391 and 6,39	I DIAL on the correction transmitter indicates between 5 mils.	
			Refer to figure 76,	

(U) Table 4-26 Monthly Parallax Correction Checks-TRR Continues.

Step	Oper	alion	Norma indication	Carrective procedure		
Б.	Check the elevation parallax correction.					
	a	Set the B	BASELINE AZIMUTH DIAL	on the azimuth correction transmitter to 0 mils		
			The elevation dual on t and +0.4 mils.	he elevation transmitter indicates between -0.4		
				Perform the procedures in table 3-20, steps 2 and 5 through 8. Disregard any reference to the MTR.		
	ь.	Set the T	TR antenna elevation to 800	mls,		
			The elevation dial on the and 806.5 mils.	o elevation transmitter indicates between 801.5		
				Refer to figure 77.		
	c	Set the B	BASELINE AZIMUTH DIAL	to 3,200 mils		
			The elevation dial on the and 798.5 mils.	e elevation transmitter indicates between 793.5		
				Refer to figure 77		
6.	Che	Check the angle parallax at increased ranges.				
	a	Verify th	at the TTR antenna is positi	oned to 0 mils azimuth and 800 mils elevation		
	ъ.	Set the T	TR range to approximately	25,000 yards.		
			On the autenna control illuminated,	computer, the SHORT RANGE indicator is not		
				Refer to figure 89		
			The AZIMUTH DIAL of between 6,399.8 and 0.2	on the azimuth correction transmitter indicates in the		
				Refer to figure 76,		
			The elevation dial on between 799.6 and 800.	the elevation correction transmitter indicates in mile.		
				Refer to figure 77.		
7.	Ret	urn the an	tenna control computer to n	ormal operation.		
	a.	Set the E	SASELINE AZIMUTH DIAI	and cutton to the angle position required by the 8c above.		
	ь.	Set the I	HORIZONTAL DISPLACED by the site	MENT dial to the horizontal displacement range		

Operation

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t - 84 4 26 1 Monthly Orientation Checks-TTR MTR and TRR

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Ste :	t peta si fi	Solver a land early p	-rau r	
	Perform the	e procedures in table 3-20		

(U) Table 4-27 Monthly Simultaneous Tracking Checker-TTR MTR and TRR CONFIDENTIAL

Normal antication

Corrective procedure

areb	_ U pr	ation	Ribitial Littlication	1.	integrise bintendie	
		te Law the	e imporez pe ator pre	reign (the universal	s in the altitude in single interesting a part of the	
1.	Pen	rform the initial simultaneous tracking checks.				
	Per	form the pr	ocedures in table 2-1	,t		
2.	Pre	pare the TT	R for the simultaneo	us tracking check	ks.	
	а		rget anter na control GE TRACK switch to		[EST switch to the lower ostsion and	
	h	Set the m	agnetron frequency	to the frequency	ased to perform the LLR range zer	
3	Pre	pare the MT	R for the simultaneo	ous tracking chec	ks.	
	a	Or the m	sade track control dr	awer, set the swi	Cales as in Ticatora	
		Switch	5	Setting		
		TEST	T	EST		
		DISABLE		wn		
		RANGE	N	ORMAL		
	ь	On the m	issue error voltage me	onitor, set the BE	ACON TARGET switch to JARGE.	
4.	Pre	Prepare the TRR for the smultaneous tracking checks.				
	α	On the ra		tro-indicator ve	erify that the TEST OPERATE switch	
	ь	On the co	untermeasures contro	olandicator, set t	he MAN AUTO switch to MAN	
5.	Pre	pare the int	ercept computer for	the simultaneous	tracking checks.	
	а	Energize i	the computer as pre-	scrubed in the da	illy power checks in TM 9 1430-1251	
	b.	On the ke	yboard/display, enter	r 6 and depress C	r.	
	C,	Enter STF	Cand depress CR			
	d	Turn on ()	ne printer plotter on	ly when data is a	vailable and a printout is required	

^{*}Ome this step if the checks in the preceding tables have been performed in sequence.

t Table (2) Month Small receipt Procking Chicking Chicken 17th MTR in a TRh. Con-nued CONFIDENTIAL

	Iperation V houses and Corrective of the edge				
	Energize the TTR, MTR, and TRR transmitters.				
	On the tarket track control power supply to ate the HV St PPLY known to STAR and degrees the HV St PPLY TON swater. Account the AV St PPLY known to obtain a andication in the center of the MAGNETRON meter white block.				
	b On the mass le track control power suppry, rotate the HV SUPPLY known to STAR and depress the HV SUPPLY ON switch. A first the HV SUPPLY known to obtain a indication of 3 ma on the MAGNETRON meter.				
	 On the countermeasures control indicator depress the MAGAL FIV and MAGB. H switches (Adjust for MODA HV and MODB HV κnobs to older a liketions in the conter of the MAGA and MAGB meters.) 				
	Prepare the system for the simultaneous tracking checks,				
Т	a. Set the printer/plotter POWER switch to ON				
Т	b. Ontain the target tracked status to release data to the computer				
Т	c. On the target antennal outrol group, momentarily depress the OFF TARGET switch				
	Acquire and track a moving target with both tracking radar systems.				
	Note. To expedite this check to gets may be designated on the bastery con ricense e-				
	Acquire and track in the automata mode, the same target with the MTR and TTR at rang, greater than 20,000 yards. For the target to be considered valid, the MTR RE, FIVE SIGNAL and TTR TARGET SIGNAL STRENGTH meters should not rate an average valuated than 2 and 20, respectively. The target electrical angle for each radar should the greater than 2 and 20 are specified in the physical object masking.				
	Perform the simultaneous tracking check with the MTR and TTR.				
	On the larget track control power supply, set the ITR PULSE WIDTH switch (SHORT				
	b. When the tracking lata for both the MTR and TTR are considered valid according to step 8 above, on the target antenna control group momentarily depress the TRACKE, switch				
	 After at least five data samples have been printed, momentarily depress the OF TARGET switch. 				
	d On the printer plotter, momentarily operate the 5LF SLW switch to SLW				
	e. Set the TTR PULSE WIDTH switch to LONG,				
	f. Repeat b through d above.				
1	Perform the simultaneous tracking check with the MTR, TTR, and TRR				
	a On the TRR countermeasures control indicator, set the MAG SEL switch to A				
	b On the target tracs control-power supply, set the TRR PULSE WIDTH switch t SHORT				
	c On the target antenna control group, set the RANGE TRACK switch to TRR				

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(U. Table 4 27 Monthly Simultaneous Tracking Checks-TTR MTR and TRR-Continued CONFIDENTIAL

Step	Opez	suon No	ormal indication	Corrective procedure	
10,	Cor	itinued			
	d.	Repeat step 9b	through d above		
	e	Set the TRR P	ULSE WIDTH switch	to LONG and repeat step 9b through d above	
	f	Set the MAG S	EL, switch to B and i	epeat step 9b through d above	
	g.	Set the TRR p	ulse width switch to	SHORT and repeat step 9b through d above	
	h		r piotter, momentari to the off (down) p	y operate the FF TEST switch to FF Set the osition	
	I.	Terminate trac	king of the target		
11	Select valid simultaneous track data samples,				
	a.	Remove the pr	intout from the com	puter printer/plotter	

Step

Operation

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Corrective procedure

11) Table 4-27 Monthly Simultaneous Tracking Checks- TTR MTR, and TRR-Continued

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Normal indication

Steh	Of Dation				
11	Continued				
	b. Discard any samples which meet the following criteria				
	(1) TTR/TRR D (YDS) is less than 20,000 yards.				
	(2) TTR/TRR TAGC and MTR MAGC is less than 2.0 volts.				
	(3) TTR TRR and MTR E (MILS, is less than 25 miles above terrain and physical object masking. Use TTR TRR and MTR A (MiLS) for az muth angle deter- minations.				
12	Evaluate the simultaneous track printout data				
	a. Note the DIFF (REF) value				
	b Note the TTR MTRC X (YDS), Y (YDS), and H (YDS) values.				
	Any coordinate indication which exceeds the DIFF (REF) value noted ω above is considered as an excessive error				
	Refer to step 13 below				
	c. Note the STD DEV for A MILS) and E (MILS)				
	Any STD DEV in excess of 0.4 mils is considered as an excessive error				
	Refer to step 13 below				
	d. Note the STD DEV for D (YDS)				
	Any STD DEV in excess of 6 and 12 yards in the SHORT and LONG pulse modes, respectively, is considered an excessive error.				
	Refer to step 13 below				
13	Determine if the simultaneous tracking data samples are satisfactory,				
	Any printout data sample which has one or more excessive errors should be considered an out-of-tolerance condition				
	For each TFR and TRR operational mode, at least 80 percent of the data samples do not contain an excessive error(s).				
	Refer to the procedures in table 6-9				
	Note. The balance of the data on the printout is used for troub eshooting purposes. Refer to table 6.9 for more information.				
14	(Deleted)				
15	Deenergize the transmitters.				
	a On the target track control-power supply, rotate the HV SUPPLY knob to START and depress the HV SUPPLY OFF switch				
	On the missie track control power supply rotate the HV SUPPLY knob to START and depress the HV SUPPLY OFF switch				
	c On the countermeasures control indicator rotate the MOD A HV and MOD 8 HV knobs fully counterc ockwise. Depress the MAG A-HV and MAG B-HV switches				

L, Table +27 Monthly Simultaneous Tracking Checks: TTR MTR and TRR—Continued
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Stop	Operation	Normal indication	Corrective procedure
16.	a On the TEST b On the	l'ewitch to TEST ne countermeasures control-ind ne missile error voitage monito	incator, set the MAN-AUTO switch to TTH and the incator, set the MAN-AUTO switch to AUTO r, set the BEACON-TARGET switch to BEACON the checks have been completed

CHAPTER 5 (C)

NONPERIODIC CHECK PROCEDURES

(U, Table 5.1 Nonperiodic Target AFC Adjustments-TTR and MTR

			UNCLASSIFIE			
Step	Open	ation Normal indic	elion	Corrective procedure		
1	Prej	Prepare for the TTR target AFC checks.				
	0.	a. Perform the procedures in table 2-1				
	- 6	On the target track cos	ntrol power supply	, set the switches as indicated		
		Switch	Settin	g		
		AGC-MANUAL	AGC			
		TTR PULSE WIDTH	SHOR	T		
		IND	R			
	c	On the target antenna	control group, set	the switches as indicated		
		Switch	Setting			
		TEST	TEST			
		MULTI BIN	OFF			
		RANGE TRACK	TTR			
		AGC-LIN-LOG	AGC			
	ď	Set the TTR range to a	approximately 20,0	100 yards.		
2.	Prej	Prepare for the MTR target AFC checks.				
	g.	g. Perform the procedures in table 2-1				
	ь	On the missile track co	ontrol drawer, set t	he switches as indicated		
		Switch	Setting			
		TEST	TEST			
		DISABLE	down			
		RANGE	NORMAL			
	c	On the missile track co the TUNE—SLEW swi		, set the AGC-MANUAL switch to AGC and		
3	Peri	form the general prepara	ations for the targe	t AFC checks.		
	On	the appropriate error vo	llage monitor, set	the switches as indicated.		
		Switch	Setting			
		(IF TEST)-ADJ	ADJ			
		RCVR TEST	AFC			
		PRESET	2			
		BEACON-TARGET	TARGE'	P		
4	Che	ck the alinement of the	magnetron to the	tuning drive.		
		EL ST. TERRES. C.	1.5			

- For the TTR, perform the procedures in table 4.2, step 3a through c
- b For the MTR, perform the procedures in table 4-14, step 3a through c

(U) Table 5-1 Nonperiodic Target AFC Adjustments-TTR and MTR Continued

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Ope	zat on	No real inflication	Corrective procedure	
Ch	eak the no	justment of the target AFC	preset voltage	
a	On the CREAS switch t	appropriate track RF con E-INCREASE switch to Dis- to tune the magnetron to the	ntro. power supply set the FREQUENCY DE ECREASE and operate the FREQUENCY TUNE low frequency stop.	
ь	On the	appropriate target AFC, disc	onnect the coaxial cable from J14	
С	On the	target AFC, connect a voltm Apply the positive lead of th	eter between +VTO MON (TP5) and VTO MON	
	**		s between -1,2 and -2,0 volts.	
			On the appropriate RF control-power supply, adjust LOW END ADJUST vari- able resistor R9 for an indication of -1.6 volts.	
			Refer to figure 49 (TTR) or 22 (MTR).	
d.	Tune ti	ne magnetron to the high free	quency stop.	
		_	s between +7.4 and +8.2 volts.	
			On the appropriate RF control-power supply, adjust HIGH END ADJUST variable reastor R7 for an indication of 7.8 volts	
			Refer to figure 49 (TTR) or 22 (MTR).	
6		r HIGH END ADJUST or I	OW END ADJUST variable resistor was adjusted,	
1	Tune ti	he magnetron to a magnetro	n d.a.l undication of 300	
g			TO MON and -VTO MON (TP5 and TP6)	
h	Recon	nect the coaxial cable to J14		
Ct	teck the T	TR AFC crystal current.		
0	At the		natter, set the XTAL SEL switch on the monitor grouph CR12	
			er indicates a value between 40 and 100 μ a for each n varies due to the AFC aweep.	
			Adjust the variable attenuator on the mixer assembly for a minimum of 40 μ a for the crystal with the lowest indication. If an adjustment was made, repeat a above	

....

Refer to figure 49

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U) Table & L. Nonperiodic Target AFC Adjustments-TTR and MTR-Continued

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6. Continued b Set the XTAL SEL switch to OFF c On the antenna support base sit the BLOWER switch to ON and the ANTE switch to NORMAL. Check the MTR AFC crystal current. a On the missle track receiver transmitter set the crystal current switch on the tamplifier-converter to CR1 and then to CR2 The XTAL CUR meter indicates a value between 0.8 and 2.0 ma for crystal. The indication vanes due to the AFC sweep. In the mixer, adjust variable attent ATT for a minimum indication of for the crystal with the lowest in uon. If an adjustment was made peat a above. Refer to figure 22. b Set the crystal current switch to OFF. c On the antenna support base set the BLOWER switch to ON and the ANTE switch to NORMAL. Perform the daily target AFC check procedures in table 2-6, steps 1 through 3 (TT) table 2-14, steps 1 through 3 (MTR). Vote If the daily check requirements can be men proceed to step 15 below. If problems stulp proceed to step 9 below. 9. Reestablish the switch settings and magnetron frequency. a. Verify the switch settings and magnetron frequency. a. Verify the switch settings and magnetron frequency. b. Verify that the magnetron is energized in the SHORT pulse mode (TTR) or BEA mode (MTR). c. On the appropriate track antenna support base set the ANTENNA switch to DISA and the BLOWER switch to OFF. d. Verify that the magnetron midal is set to 300. Acquire the magnetron m the beacon mode. a. Set the MLTI BIN switch to ZERO (TTR) and the RANGE switch to ZERO (M While observing the appropriate range indicator, slowly adjust the PRESET 2 co on the appropriate error voltage monitor counterclockwise from the maximum of wise position until range zero pulses are visible on the indicator. c. Set the range of the TTR to gate the fourth range zero pulse and set the range M	_
c On the antenna support hase sit the BLOWER switch to ON and the ANTE switch to NORMAL. Check the MTR AFC crystal current. a On the missile track receiver transmitter set the crystal current switch on the tamphifier-converter to CR1 and then to CR2 The XTAL CI R meter indicates a value between 0.8 and 2.0 ma for crystal. The indication varies due to the AFC sweep. In the mixer, adjust variable attent AT7 for a minimum indication or for the crystal with the lowest in uon. If an adjustment was made peat a above. Refer to figure 22. b Set the crystal current switch to OFF. c On the antenna support base set the BLOWER switch to ON and the ANTE switch to NORMAL. Perform the daily target AFC check procedures in table 2-6, steps 1 through 3 (TT) table 2-14, steps 1 through 3 (MTR). Note If the daily check requirements can be mer proceed to step 15 briow. If problems stall proceed to step 9 below. Reestablish the switch settings and magnetron frequency. a. Verify the switch settings and magnetron frequency. a. Verify the switch settings in steps 1 through 3 above. On the appropriate error we monitor, set the BEACON—TARGET switch to BEACON. b Verify that the magnetron is energized in the SHORT pulse mode (TTR) or BEA mode (MTR). c. On the appropriate track antenna support base set the ANTENNA switch to DIS/ and the BLOWER switch to OFF. d Verify that the magnetron made is set to 300. Acquire the magnetron in the beacon mode, a. Set the MLTI BIN switch to ZERO (TTR) and the RANGE switch to ZERO (M. While observing the appropriate range indicator, slowly adjust the PRESET 2 co on the appropriate error voltage monitor counterclockwise from the maximum of wise position until range zero pulses are visible on the indicator. C. Set the range of the TTR to gate the fourth range zero pulse and set the range M.	
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c Set the range of the TTR to gate the fourth range zero pulse and set the range M	
ACQUIRE AID-TRACK AID-AUTO switch to AUTO (FTR)	4N-
d Set the range of the NTR to gate the number 2 Deacon transmitter pulse and so range MAN—AID—AUTO switch to AUTO (MTR). Note 39 restorminates? of section note and the number of the range of the control of the section of the secti	a
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(U) Table 5-1 Nonperiodic Target AFC Adjustments—TTR and MTR—Continued
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Step	Operation:	Normal indication	Corrective procedure	
10.	serv	the appropriate error voltage	mo stor, hold the AFC SENS switch to HI and ob- djust the PRESET 2 control for an indication of 50	
*		Stable range zero p number & transmitte	ulses are visible on the range indicator (ITR). The r pulse is stable and well defined (MTR). Repeat b through a above	
11.	With the	e target AFC IF lock-on chan beacon AFC locked on the a the appropriate tracking ante	nel peropriate signal observe the target AFC LOCK and	
			cator is Illuminated.	
			Refer to figure 22 (MTR) or 49 (TTR).	
		Note. While perform LOCK indicator must re-	ng the procedures in aceps 12 and 13 below the target AFC emain Blummated	
12.	Check th	ie de balance,		
		the target AFC, disconnect th		
	b On the target AFC, connect a voltmeter between DC BAL (TP2) and GND (TP7). Connect the positive meter lead to DC BAL.			
		The voltmeter indic	ates between plus and minus 150 millivolts.	
			On the appropriate target AFC, adjust the OFFSET TRIM variable resistor for an indication as close to zero as possible.	
			Note The adjustment range of the OFFSET TRIM variable relator is small, and zero may not be obtainable	
			Refer to figure 22 (MTR) or 49 (TTR).	
	c. Rec	connect the coaxia, cable to J	6.	
13.	Check th	ie sample and hold delay adju	stment.	
401	a On	the target AFC unit rotate	the FREQ TRIM control 20 turns clockwise, then 10 the S/H STROBE TRIM control 20 turns counter-	
	b. Ver	rify that the voltmeter is conf	ected between DC BAL (TP2) and GND (TP7)	
	c Wh	ile observing the voltmeter, i all the voltmeter indication is	nanually tune the magnetron to increase the frequency approximately +3 volts	

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(U), Table 5-1 Nonperiodic Target AFC Adjustments-TTR and MTR-Continued

Stap	Operation	Normal Indication	Corrective procedure			
13.	mdice positi volts,	at the S/H STROBE T.	RIM control clockwise until the first positive maximum as voltmeter. (The first maximum may occur at the initial ETRIM contro.) If the voltage indication exceeds *4.5 to obtain an indication of approximately *3 volts and RIM adjustment.			
			n to 300 and repeat step 10e above			
	f While observing the voltmeter, adjust the S H STROBE TRIM control to obtain a indication of 0 volts					
	g While observing the voltmeter, manually tune the magnetron to increase the f quency, then to decrease the frequency.					
	The maximum positive indication is at least +4 volts.					
		The maximum r	negative indication is at least 4 voits.			
			Repeat step 13.			
			Refer to figure 22 (MTR) or 4 (TTR).			
	h Remove the voltmeter leads from DC BAL (TP2) and GND (TP7)					
	! Manually tune the magnetron to a dial indication of 300. Reconnect the tuning drive cable to the tuning drive.					
	j On the antenna support base, set the BLOWER switch to ON and the ANTENNA switch to NORMAL.					
		the magnetron to the a	assigned operating frequency. If no frequency is assigned by to midband (TTR).			
	L Tune	the magnetron to the a	ssigned cavity frequency (MTR).			
14.	Check the AFC lock-on of the target AFC.					
	On the appropriate error voltage monitor, set the BEACON—TARGET switch to TARGET					
		The error voltag	ge momtor TARGET AFC LOCK indicator illuminates.			
			Refer to figure 22 (MTR) or 4 (TTR).			
15.		discriminator center fre				
	the N	fULTI BIN switch to Z	ceptions, verify the switch settings in steps 1 and 2. Se ERO (TTR) or the RANGE switch to ZERO (MTR)			
]	b On th	ne appropriate error vol	tage monitor, verify that the switches are set as indicated			
		Switch	Setting			
	RCV	EST)— ADJ R TEST CON—TARGET	ADJ AFC TARGET			
	Add	OON TARGET	AMMANA			

(1) Tabik 6-1 Nonperiodic Target AFC Adjustments: TTR and MTR: Con sound UNCLASSIFIED

Stop	Operation	Normal induction	Core	oodye procedure			
15.	Continued						
		ze the TTR magnetron in t ET mode	he LONG pulse	mode or the MTR magnetron in the			
		Range zero pulses are	present on the	appropriate range indicator			
			Rej	pent a, b, and c above.			
,		e range to gate the fourth. ITO mode	zero pulse Sel	the appropriate range channel into			
		The fourth range zero	pulse is locked	I in the AUTO mode.			
			Re	peat d above.			
	e On the	appropriate error voltage n	nonitor, observe	the RCVR TEST meter			
			switch in the	HI position, the RCVR TEST meter			
		With the AFC SENS indicates between 40	switch in the L and 60 (MTR).	OW position, the RCVR TEST meter			
			(1)	On the appropriate track antenna support base, set the ANTENNA switch to DISABLE and the BLOWER switch to OFF			
			(2)	On the target AFC, adjust the FREQ TRIM variable resistor. If the adjustment range is insufficient, perform the procedures in steps 9 through 13 and step 15 above.			
				Refer to figure 22 (MTR) or 49 (TTR).			
16.	Reestablish	the antenna support base s	witch positions				
		propriate track antenna su switch to NORMAL.	pport base, set	the BLOWER switch to ON and the			
17.	Return the	TTR to normal operation.					
	a. On the target antenna control group, set the MLLTI BIN switch to OFF and th MAN-ACQUIRE AID-TRACK AID-AUTO switch to MAN						
		6 On the target track control-power supply, rotate the HV SUPPLY knob to START and depress the HV SUPPLY—OFF switch.					
		ne turget error voltage mor ET switch to 1.	ntor, set the R	CVR TEST switch to BIAS and the			
18.	Return the	MTR to normal operation.					
		ne missile track control do MAN-AID-AUTO switch		ANGE switch to NORMAL and the			



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Total	000	ZW CALINE.	14 GOLDANI ALIALA, WARDEN	Current	- Protection -	
18.	Co	ntinued				
	b		missile track control-pow ress the HV SUPPLY—OF		ie HV SUPPLY knob t	o START
	£.		missile error voltage mor			, the PRE-

(U) Table 5-2. Nonperiodic Beacon AFC Adjustments-TTR and MTR

Step	Ope	ration	Normal Indication		Cogrestive procedure			
1.	Pre	Prepare for the TTR beacon AFC checks,						
	a.	g. Perform the procedures in table 2-1.						
	b	b On the target antenna control group, set the TEST switch to TEST						
	с		arget track control		et the AGC-MANUAL switch to AGC			
2.	Pre	pare for the	e MTR beacon AFC	checks.				
	a.	a. Perform the procedures in table 2-1						
	b.	b. On the missile track control drawer, set the TEST switch to TEST and the DISABLE switch to the down position						
	c	c On the missile track control-power supply, set the AGC-MANUAL switch to AGC						
3	Per	Perform the general preparations for the beacon AFC checks						
	Ω	On the ap	ppropriate 1F test ge	nerator, set the s	witches as indicated			
			Switch	Setting				
				ON PULSE OFF SHORT 30				
	Momentarily operate the RANGE PRE-SET switch.							
	b.	On the ag	propriate error volt	age monitor, set	the switches as indicated			
		St	viteh	Setting				
		(IF TEST RCVR T PRESET BEACON		ADJ AFC 2 TARGET				

(U) Table 5-2. Nonperiodic Beacon AFC Adjustments-TTR and MTR-Continued

Step	Operation Normal indicate n	Солегиче распессия
		Contende procedure
3	Continued	No. 1.
	c. Operate the SWEEP PRESET swit	
	The SWP CENTER u	ndicator is illuminated.
		Refer to figure 23 (MTR) or 5 (TTR)
4.	Check the sample and hold delay adjus	tment.
	 Rotate the appropriate range hand 	dwhee, to gate the IF test pulse
	 Set the appropriate range channel 	
	 o On the appropriate IF test generate to 1. 	ator, adjust the COARSE IF FREQ ADJUST control
	clockwise, and then counterclock	c, adjust the S/H DELAY variable resistor 20 turn twise to obtain a minimum indication on the RCV scation may occur at the initial setting of the S/I
	Note: The RCVR TEST meter indication shalf FREQ ADJUST control to obtain an on-se	iou d be below 30. It may be necessary to adjust the COARS care indication
	e. Adjust the COARSE IF FREQ A cat.on of 20	ADJUST contro: to obtain a RCVR TEST meter ind
	f Adjust beacon AFC S/H DELAY	counterclockwise to obtain a meter indication of 2
5.	Check the dc balance	
	 On the appropriate beacon AFC NOISE BAL). 	c, disconnect the coaxial cable from J4 (adjacent t
	b Terminate J4 with a 50 ohm term HY1-3 can be used	meation. The termination used on MTR signal divide
	 Using a voltmeter, monitor the d BAL) and TP7 (GND). 	ic voltage on the beacon AFC unit between TP2 (D
	The voltage is between	en plus and minus 150 millivolts.
		On the appropriate beacon AFC, ad, the DC OFFSET variable resistor for a indication as close to zero as possible.
		Note. The adjustment range of the DCOF SET variable resistor is small, and zero vol- may not be obtainable
6.	Check the dc amplifier gain	
		dc voltage on the beacon AFC unit between TP pply the positive lead of the voltmeter to TP4
	 On the appropriate error voltage voltmeter indication of -1 volt. 	monitor, adjust the PRESET 2 control to obtain
		are the dc voltage between TP5 (VTO MON) and ositive lead of the voltmeter to TP6 $$

(U), Table 5.2 Nonperiodic Beacon AFC Ad astments- TTR and MTR-Continued

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Step	Opention	Northal Indication	Corrective procedure
6.	Continued		
		The voltmeter indicates	between +9 and +11 volts.
			Refer to figure 23 (MTR) or 50 (TTR)
	d. Leave th	e voltmeter leads connected	
7.	Check the loc	al oscillator (VTO) tuning v	oltage.
	a. Adjust ti	w PRESET 2 control fully o	counterclockwise.
		The voltmeter indicates	+1.0 volt or less (the indication may be negative),
			Check appropriate + or -75-volt power supply
	b. Adjust ti	e PRESET 2 control fully o	dockwise.
		The voltmeter indicates	at least +95 volts,
			Check appropriate + or -75-volt power supply.
	c. Disconne	ct the voltmeter leads.	
8.	Reestablish th	e system configuration.	
	a Remove used, ms	the 50-ohm termination add all the termination on HY1	ded in step 55 above. If the HY1 termination was -3.
			nected in step 5a above, to J4,
l		ppropriate range switch to h	MAN.
ĺ	d. Set the P	RESET switch to 1.	
9.	Perform the n	ionthly beacon AFC check p	rocedures in table 4-4 (TTR) or table 4-15 (MTR),

(U) Table 5-3 Nonperiodic Monopulse Receiver Adjustments TTR and MTR

Stap	Operation	Normal indication	Corrective procedure	
1,	Prepare the '	TTR for the monopulse	receiver checks.	
- I	Perform the	procedures in table 4-6	step 1.	
2	Prepare the N	ITR for the monopuls	receiver checks.	
Perform the procedures in table 4-16, step 1.				
3.		TR and MTR IF test g switches as indicated.	enerators.	
		Switch	Setting	
i	OSC		ON	
	MODE		CW	
	PULSE		SHORT	
	SLEW F	ATE BATTENUATOR	OFF	
		ATTENUATOR	30 0	

L+ Table 5 5 Nonperiodic Menopulse Resener Adjustments. TTR and MTh. Considued

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Step	Operation	Normal sadics ton	Currective protections		
3.	Continued				
· ·	c On the	ls for maximum indication of	adjust the FINE and COARSE IF FREQ ADJUST the error voltage monitor RCVR TEST meter		
	Vote Por t	he remainder of this sabic an 6% is otherwise indicated.	ches, controls, and meters are rocated on the error voltage		
4	Check the it	sertion loss difference betwe	en the TTR long pulse and short pulse filters.		
1	a To che	eck the sum channel, set the	e (IF TEST) ADA switch to (IF TEST) and the		
	b. Hold t	he REMOTE LOCAL switten indication of 50 on the R	h to LOCAL and adjust the MAN GAIN control to CVR TEST meter.		
	c On the	e target track control power	r supply, set the ITR PULSE WIDTH switch to		
	d On the	e [F test generator, adjust the to 50 as possible on the RC	e ATTENUATOR switches to obtain an indication by R TEST meter		
		The IF test generator	ATTENUATOR switches indicate between 19 and		
			Refer to figures 17 and 48.		
	e. Releas	e the REMOTE-LOCAL sw	itch.		
	f On th	e target track contro, powe	r supp.y. set the TTR PULSE WIDTH switch to		
	g On the	e IF test generator, set the A	PTENUATOR switches to 30 dB		
	h To ch	eck the elevation channel,	set the RCVR TEST switch to (EL) and repeat b		
	f. To ch	eck the azimuth channel, s	et the RCVR TEST switch to (AZ) and repeat b		
5.	Check the	MTR and TTR sum video lev	els.		
,	d. Using scope not t	a T-connector (UG-274 or to J3 (SUM VIDEO) of the erminate the oscilloscope is or MTR preknock	equivalent), connect the vertical input of an oscillo- appropriate IF distribution and AGC control. Do aput. Sync the oscilloscope, as required, with the		
	group The	TTR preknock is available at 1491	are available on the agria, distribution pane, in the radar set 2 and the MTR preknock at J43E		
	b On the	ne appropriate 1F test genera te PULSE WIDTH switch to 1	itor, set the MODE switch to PULSE For the TTR, LONG.		

the AGC gate to obtain minimum pulse amplitude on the oscilloscope

Rotate the appropriate range handwheel to gate the IF test pulse in the range notch.

On the IF test generator, adjust the RANGE TRIM control to center the test pulse in

(U. Table 5.3 Nonperiodic Monopulse Receiver Adjustments-TTR and MTR-Continued

lop.	Operation	Normal adjustion	Corrective procedure				
5	Continued						
		The amplitude of the o	oserved video pulse on the oscilloscope is between				
			On the appropriate IF distribution and AGC control, adjust the VIDEO GAIN variable resistor to obtain a pulse ampli- tude of 2.5 volts				
			Refer to figure 17 (MTR) or 48 (TTR)				
	ATTEN	UATOR switch to 90 dB	or, set the OSC switch to OFF and the 0-90 df				
			ect the coaxial cable to J3 (SUM VIDEO)				
6	Check the no	ise power from the antenna	and noise power gain within the radar set group.				
	σ On the the app testing test set	the time to the termination would that the OSC switch is set to OSE, or					
	SHORT	SHORT					
	cable fr	cable from SUM-J1 IN					
	d On the wise. H	d On the appropriate error voitage monitor, rotate the MAN GAIN control fully clock wise. Hold the REMOTE—LOCAL switch to LOCAL.					
		The RCVR TEST meter	r indicates at least 10.				
			 Verify the settings of the (I TEST)—ADJ and RCVR TES' switches. 				
			(2) Check the loss of IF gain in the I chain in the radar set group.				
			Refer to figure 48 (TTR) or figur 17 (MTR)				
		the REMOTE-LOCAL swi					
		ect the cable disconnected i					
	g. Hold the REMOTE LOCAL switch to LOCAL and adjust the MAN GAIN control to obtain an indication of 50 on the RCVR TEST meter						
	h On the	appropriate track IF attenua	ator, disconnect the cable from SUM- J1 IN				
		The RCVR TEST met	ox andicates less than 30.				
			Check the antenna for ross of gain. Refer to figure 17 (MTR) or 4 (TTR).				

, I Toble 5-3 Nonperiodic Monopulse Receiver Adjustments- ITR and MTR-Continued

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Slap	Ope	calian	Normal indication	Cont	ective procedure		
6.	Con	Continued					
	Ê	Release	the REMOTE-LOCAL swi	tch			
	1.	Reconn	ect the cable disconnected i	n h above			
	k		ck the elevation channel, s // above, substituting EL-J		TEST switch to (EL) and repeat c -J1 IN		
	1		k the azimuth channel, se jabove, substituting AZ-J		TEST switch to AZ) and repeat c -J1 IN		
	771.	Set the	TTR PULSE WIDTH switch	to LONG.			
7	Çb	eck the ga	in settings of the sum, azim	uth, and eleval	ion system IF channels		
	a Check the gain setting of the sum IF amplifier by performing the procedures if 4-6, steps 1 and 2 (TTR) or table 4 16, steps 1 and 2 (MTR)						
	b Acquire the radar test set in the CW mode by performing the procedures in ta steps 1 through 2g and step 2t through n (FTR), table 2-15, steps 1 through step 2through k (MTR).						
	e		target test control (TTR) of NAL LEVEL switch to 20.	or MTR contro	of indicator group, set the radar test		
	ď		appropriate error voltage in TEST)—ADJ switch to (IF		e RCVR TEST switch to (SUM) and		
	£	REMOT		CAL and adjus	inates of the radar test set. Hold the it the MAN GAIN control to obtain		
	F	Set the	RCVR TEST switch to (EL)			
	g.	Increase meter.	the antenna elevation to o	btain the maxi	mum indication on the RCVR TEST		
			The RCVR TEST met	er indicates be	tween 40 and 60,		
				(1)	On the appropriate elevation main IF amplifier, adjust the GAIN ADJ variable resistor to obtain an indi- cation of 50 on the meter		
				(2)	Perform the procedures in table		

- (2) Perform the procedures in table 2-10 (TTR) or table 2-19 (MTR).
- (3) Perform the procedures in table 2-9 (TTR) or table 2-17 (MTR) Refer to figure 17 (MTR) or 48 (TTR).
- h. Release the REMOTE-LOCAL switch,
- t To check the azimuth channel, repeat the procedures in d through h above, substituting (AZ) for (EL) and azimuth for elevation

Reestablish the switch positions.

On the target track control-power supply, set the TTR PL LSE WIDTH switch to LONG

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et! Table 5.3 Nonperiodic Monopulse Receiver Adjustments: TTk and MTR. Cost med.
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Step	Opi	emtlos	Normal Adication	Corrective procedure	
8,	Co	ntinued			
	b.	On the t	target test control, set th	e SIGNAL LEVEL switch to 70	
	c	On the	missile control norcate	or group set the TARGET STANDBY : GNAL LEVEL switch to 70	MISSILI
	d			t the (IF TEST). Allo switches to Allo	

(L) Table 5-4. Nonperiodic Computed Receiver Sensitivity Figure Check-TTR

isep	Opera son	Normal adication	Corrective procedure						
	buyed seceives for	s dependen on site constions tells by lighte	ice t alice 2.9. Daily Monopulse Receiver Chocks, requires by year adar site a minimum number must be established. This lable provides the method for establishing the com-						
	in immediate succ	n an accurate computed numb relation	or, stops 1 and 2 below must be performed with care and						
1	Measure the RI	power transmitted in the	ong pulse mode.						
	a On the ta	rget track control power su	ppsy, tune the magnetron frequency to middlessel.						
	On the T	IR antenna support hase a switch to OFF	set the ANTENNA switch to DISABLE and the						
	c Perform to power only	he procedures in table 3.3 y at midband.	is steps 4, 5, and 7a through c. Measure the RF						
		Repeat the procedures in tah	is 3.3 step 7b is beyond zero to the right), ad ust the dV ver stupply to reduce the magnetion current t obtain an ine 3.3, step 7b and c . Record the final dV value obtained						
ĺ	Note The maga when performing a	netron current used to measure itops 1d and 2 below	the RF power must be carefully noted and maintained						
	d Set the BL	OWER switch to ON and the	he ANTENNA switch to NORMAL						
2	Measure the RF	power received at the rada	r test set.						
	a Position th	e Tl R antenna to the coor	dinates of the radar test set						
	b On the rad	ar test set, set the FUNC!	TON switch to LOCAL and the METER switch						
	Note: The follow table 4-3, step 2.)	king procedure assumes that the	e RF POWER dB meter has been cal hrated. (Refor to						
	 Observe an 	direcord the indication on i	the radar test set RF POWER dB meter						

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Skep	ne arico r	No maindea in	Cot r .v procedure
2	Continued		
		The RF POWER dB me	ter indication is between 0 and 6
			If the meter indicates beyond 0, re- duce the magnetron current and RF power to obtain an on-scale indication on the target track control-power sup- ply Repeat steps 15 through 2c above
3	Compute the	receiver sensitivity figure	
	from th	g TTR final db value obtaine	
	b Aigebra MR co	ically add 55 to the result of reputed receiver sensitivity for	obtained in a above. The resultant number is the ligure. Record this number for future use.
4.	Deenergize the TTR transmitter, Rotate the HV SUPPLY knob to START and depress the HV SUPPLY OFF switch		
5	h	e radar test set for remote of CTION switch to RMT	peration.

(U, Table 5-5. Nonperiodic Monopulae Receiver Overload Adjustments-TTR

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Step	Opera	iden	Normal indication	Corrective procedure			
1	Acq	Acquire the radar test set in the short pulse, CW mode					
	α	Perform	the procedures in table 2-	7, steps 1 through 2g			
	b		SET 1 control to obtain	or set the RCVR TEST switch to AFC and adjust an indication between 45 and 55 on the RCVR			
	c			osition and slowly adjust the FINE control for an ST meter. Release the switch			
	d.	On the ta	uget test control, set the	SIGNAL LEVEL switch to 20			
2.	Perform the receiver overload adjustment.						
	а	target en		ERROR and EL ANGLE ERROR meters on the non-the antenna coordinates to obtain an indication meter			
	b.		arget IF distribution and tockwise at least 10 turns	AGC control, rotate the OVERLOAD ADJ control			

Note the indication on the target tracking console TARGET SIGNAL STRENGTH

meter

1. Tubic 5.5. Nonperiodic Monopulse Receiver Overload Adjustments. PTR: Communical

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Stap	Gperat	aos Normal adication	s agreeuwe pyoreduze				
2.	Continued						
	d	On the target track control pow and adjust the receiver GAIN of	er suppy set the AGC "MANUAL switch to MANUAL ontrol for the same meter indication is ted in c a ν ν C				
	£,	Set the SIGNAL LEVEL switch	to 10				
	-	On the IF distribution and AGG resistor clockwise, ortil the arc indicate just less than +3 mils.	control, slowly adjust the OVERLOAD ADJ variative acations on the AZ and FL ANGLE ERROR meters Do not overadjust.				
	8	Set the SIGNAL LEVEL switch	to 11				
		The AZ and EL Al	NGLE ERROR meters indicate +3 mils or greater				
			Repeat the procedures in step 2.				
			Refer to figure 48				
	h.	Set the SIGNAL LEVEL switch	to 09				
		The AZ and EL A'	GLE ERROR meters indicate +3 mus or less				
			Repeat the procedures in step 2,				
			Refer to figure 48				
8.	Rees	tablish the switch positions,					
	a.	Set the SIGNAL LEVEL switch	to 70				
		On the missile control-indica switch to STANDBY	tor group, set the TARGET STANDBY MISSILE				
	c	On the target error voltage mon	itor, set the RCVR TEST switch to BIAS				
	d	On the target track control pow	er supply, set the AGC-MANUAL switch to AGC				

C, Toble 5-6. Nonperiodic Receiver Sensitivity Double Pulse Adjustments. PTR and MTR

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\$t sp	Operation	Normal addression	Corrective procedure		
	Note Do no than 40.	t perform the procedures in th	table unless the appropriate recover senutivity is greater		
		performing the procedures in the	is table insure that the antenna is always pos tioned to the		
1.	Acquire the radar test set with the MTR.				
	Perform the procedures in table 2-15, steps 1 and 2.				
2.	Check the m	itial level of the radar test se	t double pulse		
	a. Note th	e MTR range indication			
	b. On the	missile track control drawer	set the DISABLE switch to the down position		
		On the range indicator notch	r, a stable radar test signal is centered in the range		
			Repeat step 1 above.		

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tU Table 5-6 Nonperiodic Receiver Sense wily Double Pulse Adjustments—TTR and MTR: Contract

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Step	Operation	Normal dissitable 6	Corrective bioconfine		
2	Continued	-			
	c On the SIGNA	missue control-indicator gro L LEVEL switch to 70	up, set the PULSES switch to DOUBLE and the		
		A single puise above n pansion pulse	ouse level is present at the right of the sweep ex-		
			 Very slowly, vary the MTR range approximately 300 yards above and below the range noted in a above. 		
			(2) On the radar test set subassembly, adjust variable resistor R4 fully countercockwise		
			Refer to figure 93		
			Refer to figure 23		
	d. Slight.y	vary the MTR runge to oose	erve the most stable pulse		
3.	Check the de	elay of the second radar test	set pulse.		
	Set the MTR range to the value noted in step 2a above.				
	A stable, single puise appears at the right of the sweep expansion pulse				
			On the radar test set control in the missile control-indicator group, disconnect the power cable from JT. Remove hoard A2, and reinstall the board using the extender board Reconnect the cable to JT. Slowly adjust variable resistor R60 to obtain the most stable pulse. Disconnect the power cable from JT, and replace board A2 without the extender board. Reconnect JT		
4	Check the ar	mplitude of the second radax	test set puiso.		
	1	CICNAL LEVEL cue tob to			

Set the SIGNAL LEVEL switch to 30.

A stable, single pulse appears in the range notch.

Repeat step 1 above Verify that the DISABLE switch is set to the down position.

Refer to figure 93.

b. Set the SIGNAL LEVEL switch to 40

One pulse remains centered in the range notch.

Adjust the MTR range.

1. Table 5.6. Nonperiodic Receiver Sensitivity Double Putse Adjustments—TTR and MTR. Continued

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Step	Operation	Normal Indication	Carmetive procedure	
4.	Continued			
		pulse ampatade is at le	s to the right of the sweep expansion pulse. The rast equal to that of the first pulse but not more am the amplitude of the first pulse. Disregard the	
	,		On the radar test set subassembly, adjust variable resistor R4 to set the second pulse amplitude approximately 1 16 inch greater than the amplitude of the first pulse	
	c Set the SIGNAL LEVEL switch to 70 and the PULSES switch to SINGLE			
5	Acquire the r	adar test set with the TTR a	n the short pulse mode	
	a. Perform	the procedures in table 2-7,	steps I and 2.	

- Ď.
 - Note the TTR range indication.
- 6 Check the hearon gate delay adjustment of the TTR beacon AFC
 - On the target test contro., set the PULSES switch to DOUBLE and the SIGNAL LEVEL switch to 30
 - On the target antenna control group, set the range MAN ACQUIRE AID-TRACK AID-AUTO switch to MAN

On the upper sweep of the range indicator, a single, stable pulse appears in the range notch,

Repeat step 5 above.

The TTR RSPU range indication is equal to the range noted in step 5b above.

Roset the TTR range

Set the SIGNAL LEVEL switch to 40.

A second stable pulse appears to the right of the sweep expansion pulse

Loosen the holddown screws for the TTR beacon AFC. Carefully remove the AFC unit to gain access to the underside (mounting side). Locate the hole in the chassis between FL2 and FL3. Within the hole, locate variable resistor R47. Slowly adjust R47 to provide the most stable pulse. Reinstall the AFC unit and tighten the holddown screws

Refer to figure 50

(U. Table 5-8. Nonperiodic Receiver Sensitivity Double Pulse Adjustments-TTR and MTR: Continued

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Step	Operation	Normal indication	Connective procedure
7.	Reestablish	the switch positions.	
		target test control, set the SINGLE	e SIGNAL LEVEL switch to 70 and the Pt LSES
			p, set the Mt LTI BIN switch to OFF
	e On the	e missue control indicator to STANDBY	group, set the TARGET STANDBY-MISSILE

(U) Table 5-7. Honperiodic Pulse Mode Range Shift Adjustments-TTR

Step	Operation	n N	armai industion	Corrective procedure					
1.	Prepar	Prepare for the pulse mode range shift adjustments.							
	Perfori	Perform the daily range system check procedures in table 2.8, steps 1 and 3							
2	Verify	the switch p	ositions.						
	a V	erify that th	e TTR PULSE WID	TH switch is set to SHORT					
	b. V	erify that th	e MP mode is not se	lected.					
	c. S	et the MULT	T BIN switch to ZE	RÖ					
3.	Center	the adjustm	ent range of the MP	short pulse range zero delay,					
	a 0	n the target	antenna control gro	ap, momentarity depress the MP switch					
		- (n the pulse generate	or-indicator, the MP-ON indicator is illuminated.					
				Perform the procedures in table 2-5					
		F	lange zero pulses are	present on the indicators.					
				Perform the procedures in table 2-6,					
	b. S	et the TTR r	ange to gate the firs	t range zero pulse					
			antenna control gr witch to AUTO	roup, set the range MAN-ACQUIRE AID-TRACK					
			generator indicator TTR range stops ch	preknock generator, adjust variable resistor R2 clock- anging.					
			le resistor R2 count I the TTR range ind	erclockwise to increase the range approximately 200 ication					
	f. N	lomentarily	depress the MP swite	zh					
	g. S	et the MAN-	ACQLIRE AID-T	RACK AID-AUTO switch to MAN					
4.	Check	the synchro	nizer short pulse ran	ge zero delay					
	a. S	et the TTR :	ange to gate the firs	t range zero pulse.					
	b S	et the MAN	ACQUIRE AID-T	RACK AID-AUTO switch to AUTO					

fl., Tuble 5-7 Nonperiodic Pulse Mode Range Shift Adjustments-TTR-Conditional

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	Cont	unued					
	The TTR range is equal to the range recorded in step 3c above.						
			On the track syle eren zer, asgust SYNC DELAY SHORT PULSE variable resistor £52				
	C	Set the MAN - ACQUIRE ATO: TRACK A	A DE AUTO switch to MAN				
	el.	Proceed to step 6f below					
.	Adju	ist the long pulse range zero delay.					
	a.	Verify that the TTR PULSE WIDTH switch	ch is set to SHORT				
	ь	Set the TTR range to gete the first range z	ero pulse				
	C.	South MAN, 3CQ, BREAD, SRACK 3	AID: Ac TO switch to AUTO				
	ď	Record the FTR range indication					
	€.	Set and MAN (ACQUILD) ADD TRACK A					
	f -	Set the TTR PULSE WIDTH switch to LC					
	g	Set the TTR range to gate the first range					
	h	Set the MAN (ACQUIRE AID) BRACK 1	AID A TO switch to AU7O				
		The TTR range equals the videpending on which step was	value recorded in either step $3e$ or a abov sperformed last,				
			Set the desired range into the TT RSPU using the LONG PULSE DELA switches.				
	•	Shouth TTR PL Show DIFF switch to Sits stall acquired	HORT - Verify t at the first range zero pus				
) k,	Set the range MAN ACCE READS TR. Set the TTR PULSE WIDTH switch to LC					
		The TTR range changes less t	than 15 yards.				
			Record the TTR range indication as proceed to m below,				
	I.	Proceed to step 6 below					
	373	Set the range MAN ACQUIRE ALD TR.	ACK AID: AUTO switch to AUTO				
	н		DELAY LONG P. SE variable resistor R2 If the adjustment range is insufficient, so Land purform start, 2 through 5 shows				
	0		SE DELAY swatches to set the range to U				
	p.	Repeat step 5.					
	Rec	heck the TTR range zero.					
		te Perform the step only if any adjustments wer	e made in steps 3 through 5 above.				
	a	Set the TTR PULSE WIDTH switch to Sh	ORT and the MULT. BIN switch to OFF				

Perform the daily range system check procedures in table 2-8 steps 4 through 14

(U) Table 5-8 Nonperiodic Gate and Sweep Generator Board Adjustments-TTR
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Stop .	Opazal	ion Normal Indi	ention	Corr	ective procedure					
1.	Prepa	Prepare for the gate and sweep generator board adjustments.								
	d -	A STATE TO STATE OF THE STATE O								
	b	Connect a test cable	between the	TRACK RAI	NGE MARK test jack on the TTR a Jual trace osculoscope					
İ	c	On the range mear posses to OPERATE	ower contro	ndicator, verif	y that the TEST-OPERATE switch					
		On the target track co TRR PULSE WIDTH			TTR PULSE WIDTH switch and the					
2	Perfe	rm the gate and sweep	generator bo	ard adjustmen	ta.					
	a.	Using the oscilloscope	, measure the	nelays and pu	lse widths listed below					
		Measure between	Width	Delay						
		A29TP13 A31TP3 —A31TP8	,6 μs	1.2 µs	Adjust variable resistor R1 on A31 Adjust variable resistor R2 on A31.					
		A29TP13-A31TP2 -A31TP2	aپ 6.	1.2 με						
		A29TP13 A31TP5 —A31TP5 —A31TP4 —A31TP6	.4 με 2 με ,2 με	1 3 με	Adjust variable resistor R4 on A31 Adjust variable resistor R3 on A31 Adjust variable resistor R5 on A31 Adjust variable resistor R7 on A31 Refer to figure 62.					
	ь	On the target track of PULSE WIDTH switch		mpply, set th	e TTR PULSE WIDTH and the TRR					
	C	Using the oscilloscope	, measure the	delays and pu	ae widths listed below.					
		Measure between	Width	Detay						
		A29TP15-A31TP3 -A31TP3	8.0 µ8	10 7 µs	Adjust variable resistor R9 on A31 Adjust variable resistor R8 on A31					
		A29TP16—A31TP2 —A31TP2	вд 0,8	10.7 με						
		A29TP15 A31TP6	Atv Wa	84.3 هم	Adjust variable resistor R6 on A31 Refer to figure 52					

(U) Table 5-9. Nonperiodic RSPU 5 Volt Adjustment

Step	Operation	Normal indication	Corrective procedure			
1	Prepare the TTR/MTR for the nonperiodic 5-volt adjustment.					
	Perform the	procedures in table 2-1.				

(U. Table 5-9. Nonperiodic RSPU 5-Volt Adjustment-Continued

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		_					
Step	Operation	Normal indication	Corrective procedure				
2,		Perform the RSPU 5-volt adjustment.					
	Note T	Note. The controls and indicators in step 2 are located on the RSPU front panel unless otherwise and cated.					
	g. Set	the MODE switch to M	INL.				
			OR SELECT switch to PCS.				
	c. Set	the TEST ADDRESS t	humbwheel switches to A002.				
	d. Set	the DATA toggle switc	thes to hexadecimal 20.				
		7 DOWN	3 DOWN				
	1	6 DOWN	2 DOWN				
		5 UP	1 DOWN				
		4 DOWN	0 DOWN				
		ress the WRITE DATA					
	f Set	the TEST ADDRESS t	humbwheel switches to A400.				
	g. Set	the DATA toggle switch	thes to hexadecimal FF				
		7 UP	3 UP				
		6 UP	2 UP				
		5 UP	1 UP				
		4 UP	OLP				
		oress the WRITE DATA					
	f. Set	the TEST ADDRESS	thumbwheel switches to A401.				
	j. Set	the DATA toggle swite	ches to hexadecimal 07.				
		7 DOWN	3 DOWN				
	1	4 0 0 1107	0.170				

6 DOWN 2 UP

5 DOWN 1 UP 0 UP 4 DOWN

Depress the WRITE DATA pushbutton.

On the RSPU, connect a multimeter between TP1 on analog I/O board A14 and ground Select a de voltage range of at least 10 vdc Set the RSPU DC SELECT switch to +5V.

The meter reading is approximately 5 vdc.

Adjust variable resistor R1 on analog 1/O board A14

- Disconnect the multimeter and select the maximum current range m
- Connect the multimeter positive (+) lead to TP1 on the analog I O board
- Connect the multimeter negative (-) lead to the red (+) test point on the RSPU front O. panel.
- Connect a test lead from the black (-) test point on the RSPU front panel to TP6 (GND) on the analog I/O board.

Note. The *5-volt power supply is in the left side of the base section of the RSPL front panel

(U) Table 5-9 Nonperiodic RSPU 5-Volt Adjustment-Continued

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Bies	Opensi	on	Normal indication	Corrective procedure		
2.	Conta	Continued				
			current range in step Il on the lowest curren	s while adjusting the $+5$ volt supply, as required, to trange.		
	r. 1	r. Select the maximum current range on the multimeter				
3,	Perfo	rm the indi	cator 5-volt adjustmen	t.		
		Disconnect pane	tne leads from the re	d (+) and black () test points on the RSPU front		
			e test lead from 'FP6 and on the range indicates	on the analog I/O board to TP7 on the single 6-digit for.		
			e negative lead of the digit display board.	multimeter to the positive side of capacitor C9 on		
	tion r	dieator in th		, a located in the TTR radar control consols above the cleve MTR $\pm\delta$ -voit power supply is located on the center left regrafible thought		
			current range of the n btain a null on the mir	rult.meter while adjusting the 5-volt indicator power simum current range.		
	е.	Disconnect	the test lead and the r	nultimeter leads.		
	f	Set the RS	PU DC SELEC'I switch	to OFF and the MODE switch to OPR.		

(U) Table 5-10. Nonperiodic Indicator Checks-TTR

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Step	Qp#	mtion Normal mule	tiles Corrective precedure		
1.	Pre	pare for the indicator ch	ecks.		
	a	Perform the procedure	s in table 2-1,		
	ь	On the target track cor	trol-power supply, set the switches as indicated		
		Switch	Setting		
		AGC-MANUAL TTR PULSE WIDTH IND	MANUAL LONG A		
		Rotate the GAIN contr	ol fully counterclockwise		
	c	On the target antenna TEST switch to TEST	control group, set the AGC-LIN-LOG switch to AG	GC and th	
	d	Set the TTR range to 200,000 yards.			
	e.	On the elevation indica	tor, set the NOR Hr switch to NOR		

(U) Table 5-10. Nonperiodic Indicator Checks-TTR-Continued

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Step	Operation	Normal indication	Corrective procedure			
1.	Continued					
	f On the range	f On the range radar power control-indicator, set the switches as indicated				
	Switch	Setting				
	TEST-OPE RADAR GA PULSE					
	Rotate the F	LADAR GAIN knob fu	lly counterclockwise			
2.	Check the indicator sweep circuit adjustments.					
	a Rotate the SWEEP LENGTH controls on the indicators fully counterclockwise					
	Adjust the INTENSITY and FOCUS controls on the indicators to obtain two c. defined sweeps.					
		The sweeps are focuse	d with minimum distortion.			
			On the target sweep generator, adjust			

On the target sweep generator, adjust the ASTIGMATISM control. Readjust the FOCUS control.

Refer to figure 51

c. Observe the sweeps on each indicator.

The two sweeps are separated by approximately 1-1/2 inches,

On the elevation target video amplifier, adjust the NOR SPACE variable resistor. On the range and azimuth video amplifiers, adjust the VERT SPACING controls.

Refer to figure 51.

The upper sweep is approximately 3/4 inch above the center of the indicator.

On the elevation target video amplifier, adjust the NOR CENT variable resistor. On the range and azimuth video amplifiers, adjust the VERT CENT controls

Refer to figure 51.

The sweeps are horizontally centered.

On the appropriate target sweep generator, adjust the H CENT control.

Refer to figure 51.

The edge of the sweep extends 1/4 inch beyond the range notch.

On the target sweep generator, adjust the MAX SWEEP RANGE control.

Refer to figure 51.

(U. Table 5-10. Nonperiodic Indicator Checks-TTR-Continued

CONFIDENTIAL

		CONFIDE	VIIAL		
itep	Operation	Normal sadioation	Corrective procedure		
2	Continued				
		The sweep is approxima	ately 4 inches long.		
			On the target sweep generator, adjust the A SWEEP LG control		
			Refer to figure 51		
	d If any	adjustments were made in c a	bove repeat the procedures in c above		
	e Set the	TTR range to 40,000 yards.			
	/ On eac	en maicator, rotate the SWEE	P LENGTH control fully Gockwise		
	'	The range notch is near	the right edge of the indicator.		
			On the target sweep generator, adjust the MIN SW control		
			Refer to figure 51		
		e target track control power	supply, set the TTR PULSE WIDTH switch to		
		On each indicator, the inch long.	expanded area on the sweep is approximately 1/2		
			On the appropriate target sweet generator, adjust the EXP WIDTF control		
			Refer to figure 61.		
		The sweep is approxim	ately 4 inches long.		
		•	Adjust the R SWEEP LENGTH contro on the right side of the appropriat indicator.		
			Refer to figure 61		
	h Rotat	e the SWEEP LENGTH contro	o, fully counterclockwise		
а.	Check the range notch adjustments and horizontal displacement				
_,			apply set the TTR PULSE WIDTH switch to LONG		
		ve the target range indicator			
		The TRR range notch 3/16 of an inch in amp	on the lower sweep is within the limits of 1/8 to obtude.		
			Adjust variable resistor R3 on A23 the TTR RSPU		
			Refer to figure 51		
		The TTR range notch 3/16 of an inch in amp	on the upper sweep is within the limits of $1/8~{\rm fe}$		
			Adjust variable resistor R1 on A23 i		

the TTR RSPU

Refer to figure 51.

Step 3 Operation

Continued

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(U) Table 5-10. Nonperiodic Indicator Checks-TTR -Cont naed

CONFIDENTIAL

Normal indication

Corrective procedure

J		ILLILLEGU				
	c	Operate the TTR PULSE WIDTH switch f	rom LONG to SHORT and then to LONG			
		No horizontal displacement of muth or elevation indicator	of the range noten is observed on the azi-			
			Adjust variable resistor R4 on A32 in the TTR RSPU to minimize the dis- placement.			
			Refer to figure 51			
		No homzonta: displacement o	f the range notch is observed on the range			
			Adjust variable resistor R3 on A32 in the TTR RSPU to minimize the dis- placement.			
			Refer to figure 51			
4	Ch	eck the video gain adjustments.				
	а	On the target error vo.tage monitor, verify that the BEACON-TARGET switch is set to TARGET				
	b.	b. On the target track control-power supply, verify that the TTR PULSE WIDTH switch is set to LONG. Set the AGC-MANUAL switch to AGC and the IND switch to A				
	C ^t	c On the target track control-power supply, rotate the HV SUPPLY control to START and depress the HV SUPPLY ON switch				
	d	d Adjust the HV SUPPLY control to obtain an indication in the center of the white block on the MAGNETRON meter				
		The complete magnetron transmitter pulse is visible on the indicators.				
			Perform the procedures in table 4-23, step 4.			
			Refer to figure 51			
		The magnetron transmutter putude	ulse is between 1 and 1-1/4 inches in ampli-			
			On the appropriate target video amplifier, adjust the VIDEO GAIN variable resistor if the adjustment range is insufficient, adjust variable resistor R2 on A23 in the TTR RSPU as required to enable adjusting all three indicators properly.			
			Refer to figure 51			
	ш.	Verify that the TTR RSPU MODE switch i	·			
	f	Rotate the HV SLPPLY knob to START	and depress the HV SUPPLY OFF switch			

(U, Table 5-10. Nonperiodic Indicator Checks-TTR: Continued

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seep	File	tan Smale	and the process of		
5	Check the elevation indicator +H , sweep displacement				
	a.		nna elevation to 0 mils		
	tr	Set the TTR range to	42,420 yards		
	c	On the barget of a King	outfoll power's opply set the AGC MAN- outfoll fully counter lockwise. Set the	Allswitch to MANUAL ND switch to R	
	et	have the omputer of	crator perform the procedures in a three	sugh g below	
	*	Energize the computation 12-1	er as prescribed in the day's power the	4 KS IN TM 9 1430-1251	
	1	On the keyboard/disp	lay, enter 6 and depress CR		
	g.	Enter DFL and depre			
	n	On the elevation and indicator	cator set the NOR H _T switch to H	T Observe the elevation	
		The heig	nt graticule is illuminated.		
			Refer to 1	ligure 51	
		The H_{τ}	ED display indicates between 100 an	d 100	
				settings of the TTI 0 yards) and antenn ds)	
		The low height go	er sweep is coincident with the bott aticule.	om etched mark on th	
				on target video amplifie RO variable resistor R38	
			Refer to i	figure 51,	
	Ē	Set the antenna eleva	tion to 800 mils.		
		The H _T	LED display indicates between 89,900 :	and 90,100.	
			Recheck the s na elevation	etting of the TTR anter	
		The low graticule	er sweep is coincident with the upper e	tched mark on the heigh	
			adjust 90K S If the graticu tained, adjust	on target video amplifie F variable resistor R3: le height cannot be ol LIMIT variable resisto clockwise, Readjust th le resistor	
			Refer to	figure 51.	
	1	Adjust LIMIT variable	e resistor R34 until the upper sweep jus	t starts to lower	
	h	Notify the computer	operator that the checks have been cor	npieted	

(U) Table 5-10. Nonperiodic Indicator Checks-TTR-Continued

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Step	Operation	Normal indication	Corrective procedure
6.	a On	the TEST OPERATE switch t	nd.cator, set the RADAR GAIN switch to LIN-LOG to OPERATE. supply, set the AGC—MANUAL switch to AGC

(U) Table 5-11 Nonperiodic Trucking Servo Checks-TTR

		ONGLA	SSIFIED			
Step	Operation Normal indication Corrective procedure					
1.		Check the dc balance of the servo error converters. Perform the procedures in table 3-6, steps 1 and 3.				
2.	Check the balance of the azimuth and elevation angle error modulators. Perform the procedures in table 3-6, steps 4 and 5					
3.		quire the radar test set in the short form the procedures in table 2-7, st				
4.	Che	eck the initial phasing of the azimu	th IF and elevation IF channels.			
	a	Position the TTR antenna in azi test set azimuth coordinate	muth to approximately 5 mils greater than the radar			
		On the error voltage an the positive direct	e momtor, the AZ ANGLE ERROR meter indicates ion.			
			On the TTR error voltage monitor, adjust the AZ PHASING control for a maximum positive meter indication. If no indication can be obtained on the TTR error voltage monitor, rotate the AZ GAIN control fully clockwise			
			Refer to figure 53			
	6	Repeat a above, substituting elev-	ation for azimuth and EL for AZ			
	Ç.	Position the TTR antenna to the	coordinates of the radar test set.			
5.	Che	Check the phasing of the azimuth IF channel in the short pulse mode				
	G.	Set the MAN-ACQUIRE AID-	FRACK AID-AUTO switch to MAN			
	b.	b. On the signal distribution panel in the radar set group, reverse the cables to the IF HY-3 hybrid, terminals 2 and 3.				
	c	Set the MAN-ACQUIRE AID-	FRACK AID-AUTO switch to ACQUIRE AID			
	d	Position the TTR antenna in azi test set azimuth coordinate	muth to approximately 5 mils greater than the radar			
	e	On the target error voltage mon position	stor, operate and hold the AZ SENS switch in the HI			

(U) Table 5-11 Nonperiodic Tracking Servo Checks-TTR-Continued

			UNCLASSI	FIED		
Stop	Openi	tion	Normal indication	Corrective procedure		
Б.	Con	tanued				
			The AZ ANGLE ERRO	R meter indicates within 5 small divisions of zero,		
				On the TTR error voltage monitor, adjust the AZ PHASING control for an indication of zero		
				Refer to figure 53.		
	f		the TTR antenna in azimu ith coordinate.	th to approximately 5 massless than the radar test		
	1		The AZ ANGLE ERRO	OR meter indicates within 5 small divisions of zero		
				 Repeat d through f above, adjust- ing the AZ PHASING control to split the meter indication observed in e and f above. 		
				(2) Perform the procedures in table 6-8		
	8-	Release t	the AZ SENS switch.			
	h	Position	the TTR antenna to the coo	ordinates of the radar test set.		
6.		Check the phasing of the azimuth IF channel in the long pulse mode				
	12.	a. Set the TTR PULSE WEDTH switch to LONG. The radar test set pulse is in the range notch.				
	i		The radar test set purse			
				Perform the procedures in table 2-7, steps 2 and 3.		
	Ь	On the e	error voltage monitor, open	ate and hold the AFC SENS switch in the HI post		
	1		The RCVR TEST mete	r indicates 50		
				On the error voltage monitor, adjust the PRESET 1 FINE control to obtain an indication of 50 on the meter.		
				Refer to figure 50.		
	C;	Release	the AFC SENS switch.			
	d		the TTR antenna in azimu zimuth coordinate	th to approximately 5 mas greater than the radar		
		12	4 14 - L - 4 G CDMC 4	1 41 PTF -4		

e Operate and hold the AZ SENS switch in the HI position

The AZ ANGLE ERROR meter indicates within 5 small divisions of zero.

On the azimuth long pulse bandpass filter, adjust the PHASE TRIM control for an indication of zero. If zero can not be obtained, set the azimuth PHASE TRIM control to approximately midrange. Adjust the sum long pulse bandpass filter PHASE TRIM control. Repeate above

Refer to figure 48

Corrective procedure

(U, Table & II Nonpercodic Tracking Servo Checks-TTR-Continued

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Step	Openilo	n Normal indication	Corrective procedure	
6.	Conta			
		elevation and azimuth oh	pulse bandpass filter PHASE TRIM control is adjusted, both annels must be rechecked in the long pulse mode	
		et azımuth coordinate,	buth to approximately 5 mils less than the radar test	
		The AZ ANGLE ERI	OR metar incicates within 5 small divisions of zero.	
		- 11 - 11	Repeat d through f above, adjusting the AZ PHASING control to eplit the meter indication observed in e and f above	
	g. I	Release the AZ SENS switch.		
	h F	osition the antenna in azimuth to	the coordinates of the racar test set	
7	Check	the phasing of the elevation char	nnel in the short pulse mode	
	g. 5	Set the TTR PULSE WIDTH swite	th to SHORT	
		Perform the procedures in step 5a tion for azimuth	through habove, substituting EL for AZ and carva-	
8.	Check the phasing of the elevation channel in the long pulse mode			
	1 0	wimuth	5 above, substituting EI for AZ and elevation for	
	0. 1	Reverse the cables to HY-8, terms	ID—TRACK AID—AUTO switch to MAN rals 2 and 3 RACK AID—AUTO switch to ACQUIRE AID	
9.		the azimuth error channel gain t		
ο,		Set the TTR PULSE WIDTH swite		
	G, 1		se is in the range notch	
		The radar cent act por	Perform the procedures in table 2-7,	
			steps 2 and 3.	
		Set the elevation and azimuth M coordinates of the radar test set	IAN-AID-AUTO switches to AUTO Record the	
		The TTR antenna is	auto locked to the radar test set pulse.	
	1		Refer to figures 48, 53, and 54	
	c :	Set the elevation and azimuth MA	N-AID-AUTO switches to MAN	
	d 1		auth to 5 mus greater than the ragar test set azimuth	
		The AZ ANGLE ER	ROR meter indicates +5 mils.	
			On the error voltage monitor, adjust- the AZ GAIN control If the adjust- ment range is madequate, perform the	

above. Refer to figure 48

procedures in table 5-3, step 7. Repeat the procedures in steps 1 through 9

(U) Table 5 11 Nonperladic Tracking Serva Checks-TTR-Continued

Step	Open	tlon	Normal indication	Corrective procedure		
9.	Continued					
	E	e Position the TTR antenna in azimuth to 5 mils less than the radar test set azimuth coordinate noted in b above.				
			The AZ ANGLE ERRO	R meter indicates between -4 and -6 mils		
				Refer to figure 48		
10.	Chec	k the azu	auth error channel gain in t	he long pulse mode.		
	a.	Set the T	TR PULSE WIDTH switch	to LONG		
			The radar test set pulse	is in the range notch.		
				Perform the procedures in table 2-7 steps 2 and 3		
	ъ.		the TTR antenna in azimut te noted in step 95 above,	th to 5 mils greater than the radar test set azimut		
			The AZ ANGLE ERRO	R meter indicates +5 mils		
				On the target azimuth servo error converter, adjust the LP TRIM control.		
				Refer to figure 53		
	c		the TTR antenna in azim, tes noted in step 95 above	th to 5 mils less than the radar test set azimut		
			The AZ ANGLE ERRO	R meter indicates between -4 and 6 mils,		
				Refer to figure 48.		
	et.	Position 1	the antenna in azimuth to t	he coordinate of the radar test set.		
1.			ation error channel gain in			
	1			substituting EL for AZ and elevation for azimuth		
2.			ation error channel gain in			
				substituting EL for AZ and elevation for azimuth		
.3,		Check the azimuth and elevation error channel response to varying input signal levels				
	a.	Position		ardinates of the radar test set		
			The radar test set pulse	•		
				Perform the procedures in table 2.7 steps 2 and 3.		
	b.	b. Position the TTR antenna to obtain an indication of +b mils on both the AZ ANGLE ERROR and the EL ANGLE ERROR meters on the target error voltage monitor				
	C	On the ta	rget test control, depress an	nd hold the LONG PLS PWR INCR switch.		
			The AZ and EL ANGLE	E ERROR meters indicate from +4 to +6 mils.		
				Perform the procedures in tables 44 and 5-8		
	d	Release t	he LONG PLS PWR INCR a			

(U) Table 5-11 Nonperiodic Tracking Servo Checks-TTR-Continued

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Stup	Operation	Normal Indication	Corrective procedure			
13.	Continued					
	e On the	target test contro., set the 8	HGNAL LEVEL switch from 00 to 40 in 10-db			
		For each 10-db step, the from +4 to +6 miles	ne AZ and EL ANGLE ERROR meters indicate			
			Perform the procedures in tables 4-6 and 5-3			
	f. Set the	SIGNAL LEVEL switch to 5)			
		The AZ and EL ANGLE	ERROR meters indicate from +3 to +7 mils.			
			Perform the procedures in tables 4-6 and 5-3			
	g. Reset t	he SIGNAL LEVEL switch to	00			
14.	Check the azimuth and elevation error channels response to CW signals.					
		that the AZ and EL ANGLI reposition the TTR antenna.	E ERROR meters still indicate +5 mils. If nec-			
	b On the	target test control, set the MC	DE switch to CW			
		The AZ and EL ANGLE +6 mils.	E ERROR meter indications are between +4 and			
			Refer to figure 48			
	c. Set the	elevation and azimuth MAN-	AID—AUTO switches to AUTO			
		The TTR antenna is auto	locked to the radar test set signal.			
			Refer to figures 48, 53, and 54.			
15.	Reestablish the switch positions,					
		MULTI BIN switch to OFI	and the range MAN ACQUIRE AID-TRACK			
	b. Set the	elevation and azimuth MAN-	AID-AUTO switches to MAN			
		target test control, set the to PULSE	SIGNAL LEVEL switch to 70 and the MODE			
		e missile control-indicator g to STANDBY	roup, set the TARGET-STANDBY MISSILE			

(U) Table 6-12, Nonperiodic Target Track Control-Power Supply Check—TTR UNGLASSIFIED

Slap	Operation	Normal Indication	Connective procedure
*1.	Prepare for i	the check.	d on the target track control-power supply power supply to a service position and remove the

1, Table 5.12 Nonperinter Torget Track Con the Power Supply Check-TTR Continued

UNCLASSIFIED

Step	Operation	Normal indicasion	Carrective procedure
*1		the HV SUPPLY knob to S	TART and observe the position of the stop on the
		All brush arms are posi-	tioned against the stops
		1211 07 44111	Loosen the setscrews, and position the brush arms against the stops
	Dougness the	dody TTR transmitter check	procedures in table 2-5, steps 1 through 4
3	Return the	equipment to normal operation to Supply knob to S	on. TART and depress the HV SUPPLY OFF switch care the target track control-power supply

(U. Table 5-13 Nov periodic Power Mondor Adjustments: TFR MTR and TRR

Hiep -)peration	Norms, Indication	Carret for procedure				
1.	At the antenna support base, set the ANTENNA switch to DISABLE and the BLO						
2	Perform the	e power monstor adjustments	for the TTR.				
-	a Subtra	act 50.5 from the average los track monopulse-duplexer.	s in db, stamped on the directional coupler on the				
	b On th	e power monitor, set the SCA	LE—db switch clockwise from its stop the number above value of the difference obtained in a above				
		a the look or servey and may	ve the escutcheon peals of the SCALE—db swilch				
	antal	the O falls beneath the switch	pointer Lock the plate in this position.				
	d Remo	we the court from the small	. SCALE—db switch and set the switch cockwish Jons equal to the number of tenths in the difference				
	e Verif	y that the value of the power ower monitor thermistor mou	monitor matching resistor is the value required fo				
	f Set th	e BLOWER switch to ON and	d the ANTENNA switch to NORMAL				
3	Perform th	e nower monitor adjustments	s for the MTR				
	a Subta	act 47 5 from the average lo	ss in db, stamped on the directional coupler on th				
	b. Perfo	rm the procedures in step 2b	through f above				
4.	Perform ti	se RF power test set adjustme	ents for the TRR.				
A+	a. Subt	ract 41 from the midband freer supply group	quency loss in db, stamped on the range RF contro				
			through fabove on the RF power test set				

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(U) Table 5 14. Nonperiodic Transmitter Pulse Width Checks-TTR and MTR

		UNCLASS	IFIED
Stop	Operation	Normal indication	Corrective procedure
1.	a, Perform	ne transmitter pulse width cl the procedures in table 2-1	
	antenna		is between the radar test set and the TTR or MTR
	You ber centim	ater sensitivity	il oscope with at least a 10-MHz bandwidth and a 5-m li
	VIDEO	coaxial jack. Terminate the	vertical input of an oscilloscope to the MTR/TTR coaxial cable with a 75-ohm termination
		radar test set, verify that the witch to LOCAL	te AC POWER switch is set to ON Set the FUNC
2.	Check the T	FR transmitter pulse widths	
	SHORT		supply, set the TTR PULSE WIDTH switch to
	and dep	ress the HV SUPPLY-ON a	
		the HV SUPPLY knob to c eter white block	btain an indication in the center of the MAGNE-
			e coordinates of the radar test set.
	e At the pulse.	radar test set, adjust the or Use internal sync	schoscope controls to display the transmitted RF
		at the 50-percent amp	On the TTR or MTR trigger amplifier, adjust the SHORT PULSE ADJ variable resistor to obtain a pulse width of 0.3 microseconds. If the adjustment range is insufficient, set the SHORT PULSE ADJ variable resistor to approximately midrange. On the trigger amplifier printed circuit board, adjust variable capacitor C2 to obtain a pulse width of approximately 0.3 microseconds. Set the required pulse width by adjusting the SHORT PULSE ADJ variable resistor. The pulse width of the pulse width of approximately 0.3 microseconds.
			Refer to figure 47 (TTR) Refer to figure 16 (M FR)
	f On the	target track control-powe	r supply, set the TTR PULSE WIDTH switch to

* Table 5-14 A inperionic Transmitter Pulse of the Cheens-TTR and MTR. Continued

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Step	Oper	n tạo n	Normal adverse o	Carrec live procedure			
2	Con	itimaed					
	g	Adjust the	ose moscope controls to dis	play the transmitted RF pulse			
				width is between 2.3 and 2.7 microseconds at			
			the 50-percent amplitude	point. On the TTR trigger amplifier, adjust the LONG PULSE ADJ variable resistor to obtain a pulse width of 2.5 microseconds. Refer to figure 47			
			The observed RF pusse I edge due to transmitter a	nas no indication of breaking up at the trailing roing.			
				Refer to figure 47			
	h		rget track control-power su ss the HV SUPPLY OFF sw	pply, rotate the HV SUPPLY knob to START itch			
3.	Check the MTR transmitter pulse width.						
	а	On the ma	ssue error voltage monitor, s	et the BEACON-TARGET switch to TARGET			
	ь		ssile track contror power su ss the HV SUPPLY—ON swit	pp.y, rotate the HV SUPPLY knob to START ch			
	c	Adjust the meter	HV SUPPLY knob to obta	an an indication of 3 ma on the MAGNETRON			
	ď.	Perform ti	ne procedures in step 2e abo	re			
	No resis	Note. If the MTR trigger emplifier is a vacuum tube design and does not have an SP ADJ variable resistor, the pulse width should be between 0.23 and 0.32 microseconds					
	е		ssile track contropower sust the HV SUPPLY—OFF sw	pply, rotate the HV SUPPLY knob to START itch			
	f	On the mi	ssue error voltage monitor, s	et the BEACON TARGET switch to BEACON			
4,	Ree	stablish the	system status.				
	62.	On the rad	lar test set, set the FUNCTION	ON switch to RMT			
	ь.		t the oscilloscope and return				
	e		on the telephone communicate og radar antennas,	itions established between the radar test set and			

(U, Table 5-15. Nonperiodic Transmitter Prequency Checks-MTR

Step	Oper	etioz.	Normal indication	Carrective procedure	
1	Prepare for the transmitter frequency checks.				
	а	Perforn	a the daily target AFC chec	k procedures in table 2-14, steps 1 and 2.	

(U) Table 5-15. Nonperiodic Transmitter Frequency Checks-MTR-Continued

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tep	Oparat	tion Normal in	dication	Corrective presedure		
1.	Continued					
	5	On the missile track	control power supply	y, set the TUNE-SLEW switch to SLEW		
	c	On the missile error	voltage monisor, set (INCREACON TARGET, SWITCH TO BEACON		
	d		control is wer sup of on the MAGNETRO	y udj st the HV SUPPLY knob to obtain a N meter		
2.	Adju	st the current on the	frequency error con-	verter.		
	а	On the antenna supposition to OFF.	ort base, set the AN	TENNA switch to DISABLE and the BLOWER		
	b.	Adjust variable resis	tor R12 on the freq.	ency error converter fully sounterclockwise		
	C	CREASE or DECRI magnetron to the arc below. The follows	EASE and operate the of the talank and t	supply set the FREQUENCY switch to IN he FREQUENCY IT ME switch to tune the heat corresponds to the cavity in use as note numbers on the magnetron tuning drive du- avity types.		
		Cavity no.	Tuning dual	no		
		9157979	1			
		9157980	2			
		9157981	8			
		9157982 9157983	4 5			

- d Operate the FREQUENCY—TUNE switch to tune through the area until a deep nul. (d.p., is noted on the meter on the frequency error converter. Care should be exercised to obtain the strongest nul. since it is possible to observe more than one null on the meter. Adjust variable resistor R12 to keep the indication on-scale.
- e Set the TUNE SLEW switch on the missile track control-power supply to TUNE. Adjust variable resistor R.12 until the minimum point of the null is approximately 0.1 mg as observed on the meter.

Caution. It may be necessary with some cavities to readjust the attenuator on the duplexer in order to obtain a good null. Loosen the locking nut and turn the slotted shaft clockwise a maximum of 5 turns. Caution must be exercised to avoid damaging the attenuator block from excessive torque.

f Set the ANTENNA switch to NORMAL and the BLOWER switch to ON

8. Calibrate the FREQUENCY meter.

- On the missile track control-power supply, set the TUNE-SLEW switch to SLEW
- b. With the magnetron operating at the frequency determined in step 2d above, observe the FREQUENCY meter.

(U) Table 5-15. Nonperiodic Transmitter Frequency Checks-MTR-Continued

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Hing	Operation	Normal inducation	Corrective procedure		
3.	Continued				
		The FREQUENCY me cavity in use.	eter (SLEW scale) indicates the number of the		
		*	Adjust the METER ADJ SLEW variable resistor on top of the missile track control-power supply		
			Refer to figure 16.1.		
	a Set the T	UNE-SLEW switch to TUI	NE.		
	CREASE	nissile track control-power for DECREASE as necessa REQUENCY meter	supply, operate the FREQUENCY switch to 1N ry to obtain a maximum indication (to the right		
		The OFF FREQ indicat	or light is illuminated.		
			Refer to figure 16,1,		
	a. Set the C	VERRIDE switch to ON			
	The OFF FREQ indicator light extinguishes,				
		•	Refer to figure 16.1.		
	f. Set the C	VERRIDE switch to OFF.			
	g. Adjust the FRE	Adjust the METER ADJ TUNE variable resistor to obtain a maximum indication or the FREQUENCY moter			
	h Operate the FRE	the FREQUENCY switch to QUENCY meter just enters	o INCREASE or DECREASE until the pointer of the white segment of the TUNE scale.		
		The OFF FREQ indica	tor light extinguishes.		
			 Adjust the RELAY ADJUST var able resistor on top of the missil track control-power supply. 		
	,		(2) Repeat d and h above.		
			Refer to Figure 16,1		
		the FREQUENCY switch u hite segment of the TUNE s	ntil the FREQUENCY meter indicates a null (dij scale		
4.	Deenergize th	e MTR transmitter.			
			and depress the HV SUPPLY-OFF switch		

tU, Table 5-15 Nonpertodic Computed Recover Sensitivity Figure Check: MTR

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ceiver Checks) re- number must be method for estab

Corrective procedure

1. Table 5. 6. Nonperiodic Conquited Receiver Sensitivity Figure Check. MTR. Continued

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		O-VOCAGGII 10D					
	Sanp	Communion NOT this likely a stor	Course the Directions				
		Note: Tr it is no net rate compute Us., and its smitted are necession.	mover sceps func 2 of his uple most be per ormed with inte-				
	1.	Measure the RF power transmitted in	the BEACON mode.				
		 on the aptenna pedes all set the ANTENNA switch to DISABLE and the BLOWER switch to OFF 					
		b. Perform the procedures in table 3	-9, steps 4, 5, and 7				
		SUPPLY condoi or the masile track contri	table 3-9 step 7a is beyond zero (to the right), ad ust the HV dipower supply to reduce the magnetion current to obtain an all all 3-9 step 7. Rec. 4 the final do value obtained in				
		Note. The magnetron current used to med when performing steps Is and 2 below.	mure the RF power must be carefully noted only more a ned				
		 6 Set the BLOWER switch to ON a 	nd the ANTENNA switch to NORMAI				
	2.	Messure the RF power received at the radar test set.					
		g. Position the MTR antenna to the	coordinates of the radar test set				
_		 On the radar test set, set the FL to 0. 	NCTION switch to LOCAL and the METER switch				
		Note: The following procedure assumes it table 4-3, step 2-)	at the RF POWER dB meter has been cal brated. (Refer to				
		c Observe and record the indication	on the radar test set RF POWER dB meter				
		The RF POWER dB	meter sudication is between 0 and 6.				
			If the meter indicates beyond 0, reduce the magnetron current and RF power to obtain an on-scale indication on the missile track control-power supply, Repeat steps 1a through 2c above,				
	3	Compute the receiver sensitivity figure					
		from the MTR final db value obta	a Subtract the radar test set RF POWER dB meter indication obtained in step 2c above from the MTR final db value obtained in step 1b above.				
		 A gebra cally add 58 to the result MTR computed receiver sensitivity 	t obtained in a above. The resultant number is the grigure. Record this number for future use.				
	4	Deenergize the MTR magnetron transm Rotate the HV St PPLY control to ST	itter, AR I and depress the HV SUPPLY—OFF switch				
	5	Condition the radar test set for remote Set the FUNCTION switch to RMT					

(U) Tab 5-17 Nonperiodic Gale and Sweep Generator Board Adjustments MTR

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Step	Operation	attraction (agrange)		Corrective procedure	
1	a On the MTR RSEL front panel set the MODE switch to OPR b Connect a test cable between the TRACK RANGE MARK test jack on u RSPU front panel and the external sync input on a dual-trace oscilloscope Perform the gate and sweep generator board adjustments.				
-	Using the osci Measure betw A29TP13-A3 -A8 A29TP13-A3 -A8	lloscope measure the sen Width SITP3 ITP3 .6 µB	e demys and μ Detay 1 2 μs 1 3 μs	Adjust variable resistor R1 on A31 Adjust variable resistor R2 on A31. Adjust variable resistor R2 on A31. Adjust variable resistor R3 on A31. Adjust variable resistor R5 on A31. Refer to figure 20	
3.	Disconnect th	e oscilloscope and te	st cable		

(U) Table 5-18. Nanperiodic Indicator Checks-MTR

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itep	()paim	Sien	Norma Indication	Corrective procedure			
1.	Prepare for the indicator checks.						
	a.	Perforn	the procedures in table 2-1.				
	ь			set the TEST switch to TEST			
	c	On the	missue track control power ad rotate the GAIN control for	supply, set the AGC-MANUAL switch to MAN- illy counterclockwise.			
	d.	Set the	MTR range to 40,000 yards				
2	Che	Check the range indicator sweep circuit adjustments and range notch amplitude.					
	a.	On the	MTR range indicator, set the LENGTH control fully clock	e IMAGE SPACING switch to OFF and rotate the			
			The sweep is focused w	th minimum distortion.			
				On the missile sweep generator, adjust the ASTIGMATISM control. Readjust the FOCUS control			
				Refer to figure 21			
			The sweep is positione indicator.	d approximately 1/2 inch below the center of the			
				On the missile video amplifier, adjust the VERT CENT control.			

Refer to figure 21.

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(U) Table 5-18. Nonperiodic Indicator Checks-MTR: Continued

Siep	Dp.	era tron	Normal odiration	Corrective procedure
2.	Co	ntinued		· · · · · ·
			The expanded area is at	the right side of the indicator.
				On the missule sweep generator, adjust the MIN SW control
				Refer to figure 21
	b.	Rotate ti	he SWEEP LENGTH control	fully counterclockwise
			The expanded width me	asures approximately 1/2 inch.
				On the missile sweep generator, adjust the EXP WIDTH control
				Refer to figure 21
	c	Set the A	ATR range to 200,000 yards	
			The sweep length is app	oximately 4 inches long.
				On the missile sweep generator, adjust the NB SWEEP LG contro. If the adjustment range is insufficient, adjust the MAX SWEEP LENGTH control in the right side of the indicator
				Refer to figure 21
			The sweep is horizontall	y centered.
				On the missile sweep generator, adjust the H CENT control
				Refer to figure 21.
			The edge of the sweep	extends 1/4 inch beyond the expanded area
				On the missile sweep generator, adjust the MAX SWEEP RANGE control
				Refer to figure 21
			The range notch in the amplitude,	expanded area is within 1/8 to 3/16 of an mich in
				Adjust vanable resistor R1 on A23 in the MTR RSPU
	d	If any sw b and c al	reep curcuit adjustments wer bove	e made in b or c above, repeat the procedures in
3.	Set	the AGC-	MANUAL switch to AGC.	
4.	Che	ck the vide	o gain adjustments.	
	a.			set the BEACON-TARGET switch to TARGET
	b	On the m	ssile track control power sixs the HV SUPPLY—ON swi	pply, rotate the HV St PPLY knob to START

(U. Table 5-18. Nonperiodic indicator Checks-MTR: Consinue.

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p .	nena	. Sn	Normal indicasion	Correction by seconds
	Conf	linued		
	L	Adjust ti meter	ne HV St PPLY Roob to of	etain an indication of 3 tota on the MAGNETRON
	d	Observe	the range indicator	
			The magnetion transp amplitude	nitter pulse is between 1 and 11,4 inches a
				On the missile video amplifier, adjust the VIDEO GAIN variable resistor. I the adjustment range is insufficient adjust variable resistor R2 on A32 ii the MTR RSPU.
				Refer to figure 21
	ę	Rotate t	he HV SCPPLY knob to S	TARF and depress the HV SUPPLY Of a switch
	€.	Set the E	BEACON-TARGET switch	to BEACON

(U) Table S 19 Nonperiodic Tracking Servo. Chechs-MTR

Step	Operation Name	nal indication	Corrective procedure
1	Prepare for the tracks	ng servo checks.	
	On the missi e contro	 ndicator group, set t 	he switches as indicated
	Switch	Setting	
	SIGNAL LEVEL FREQ SELECT MODE PULSES	00 REMOTE PULSE SINGLE	
2	***************************************	of the servo error con res in table 3-11, steps	
3	Check the balance of the azumuth and elevation angle error modulators. Perform the procedures in table 3-11, steps 4 and 5.		
4		t set in the short pulse res in table 2-15, steps	
5	Check the initial pha-	sing of the azimuth IF	and elevation IF channels.
	a Position the Miltest set azimuth		to approximately 5 mils greater than the radai

(U. Table 5-18. Nonperiodic Tracking Serva Checks-MTR-Continued

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Step	Operation	Mormal Indication	Corrective procedute			
5	Continued	On the MTR error volt	age monitor, the AZ ANGLE ERROR meter indi			
		cates in the positive dire	on the MTR error voltage monitor adjust the AZ PHASING control for maximum positive meter indication. I no indication can be obtained on the MTR error voltage monitor, rotate the AZ GAIN control fully clockwise. Refer to figures 17 and 18 (AZ or 19 (EL).			
	b Repeat a	shove is hebituling elevatio	on for azimuth and EL for AZ			
	e Position	the MTR antenna to the co	ordinates of the radar test set			
6.	Check the phasing of the azimuth IF channel.					
u.	a On the signal distribution panel in the radar set group, reverse the cable and termina tion on 1F HV-1 hybrid, terminals 2 and 3					
	b Position	the MTR antenna in azimi	ith to approximately 5 mils greater than the rad			
•	c On the	ion	tor, operate and hold the AZ SENS switch in t			
		The AZ ANGLE ERRO	OR meter indicates within 5 small divisions of ze			
			On the MTR error voltage monits adjust the AZ PHASING control if an indication of zero			
			Refer to figure 17			
	d Position	the MTR antenna in azimi	uth to approximately 5 mils less than the radar t			
		The AZ ANGLE ERRO	OR meter indicates within 5 small divisions of ze			
			 Repeat b through d above, adjuing the AZ PHASING control split the meter indication observing and d above 			

Position the MTR antenna to the coordinates of the radar test set

Check the phasing of the elevation channel.

Release the AZ SENS switch

- Perform the procedures in step 6b through f above, substituting EL for AZ and eleva tion for azimuth.
- Perform the procedure in step 6a above to restore normal operation

7.

(2) Perform the procedures in table 6-8.

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(U) Table 5-19. Nonperiodic Tracking Servo Checks-MTR Continued

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	(, pera) toh	Normal ardication	Corrective procedure
	Check the azi	muth error channel gain	
	a Set the	elevation and azimuth MANtes of the radar test set.	N AID-AUTO switches to AUTO Record the
1		The MTR antenna is aut	o locked to the radar test set pulse
			Refer to figures 17, 18, and 19.
l	b Set the e	levation and azimuth MAN	AID-AUTO switches to MAN
	ε Position	the MTR antenna in azimut ite noted in a above.	n to 5 mils greater than the radar test set azimutl
1	2001		R meter indicates +5 mils
			On the MTR error voltage monitor adjust the AZ GAIN control. If the adjustment range is madequate, per form the procedures in table 5-3, step 7 Repeat steps I through 8 above.
			Refer to figure 17.
		the MTR antenna in azimu	th to 5 mils less than the radar test set azimut
-	***************************************	The AZ ANGLE ERRO	R meter indicates between -4 and -6 mils.
1			Refer to figure 18
	Check the ele	vation error channel gain	
i	Perform the	procedures in step 8 above,	substituting EL for AZ and elevation for az.mut
			annel response to varying input signal levels.
	a Position	the MTR antenna to obtain	an indication of +5 mils on both the AZ ANGL R meters on the missile error voltage monitor.
		missile control indicator gr l-db steps	oup, set the SIGNAL LEVEL switch from 00 (
		For each 10-db step, from +4 to +6 mils.	the AZ and EL ANGLE ERROR meters indicate
			Perform the procedures in tables 4-1 and 5-3
	c. Set the	SIGNAL LEVEL switch to 8	30
		The AZ and EL ANGL	E ERROR meters indicate from +3 to +7 mils.
			Perform the procedures in tables 4-1 and 5-3
	d. Reset th	e SIGNAL LEVEL switch to	00
	Check the az	muth and elevation error ch	annels response to CW signals.
	a. Verify		E ERROR meters still indicate +5 mils. If nece

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(U, Table 5-19 Nonperiodic Tracking Serva Checks-MTR-Continued

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Step	Operation	Normal indication		Corrective procedure			
11.	Continued						
	b On the missue control-indicator group set the MODE switch to CW						
		The AZ and El and +6 mils.	L ANGLE FRRO	OR meter indications are between +4			
				Refer to figure 17			
	c Set the	elevation and azımuth	MANHAID: AU	TO switches to ALTO			
		The MTR antenn	a is auto locked t	o the radar test set signal.			
				Refer to figure 17.			
12.	Reestablish the switch positions.						
	a On the	a On the missile control-indicator group, set the switches as indicated					
		Switch	Setting				
	TARGE MISSI	T-STANDBY	\$TANDBY				
	SIGNAL	LEVEL	70				
	MODE		PULSE				
	b. Set the	elevation and azimuth	MAN AID-AU	TO switches to MAN			
	c. Set the	DISABLE switch to th	e down position.				

(U) Table 5-20 Nonperiodic Radar Coder Checks-MTR

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Stap	Ope	retion.	Normal Indication	Corrective procedure			
1.	Prepare for the radar coder checks.						
	a.	Perform	the procedures in table 2	-1.			
	b.	On the I	missile track control pow	er supply, set the AGC-MANUAL switch to MAN			
	c			itor, set the PRESET switch to 3 Rotate the PREset the BEACON-TARGET switch to BEACON			
	ď.	On the p	nassile track control draw	ar, set the switches as indicated			
		Switch	Settin	8			
		TEST	TEST				
		DISABL	E down				
		RANGE	NORM	AL			

(U) Table 5-20. Nonpenodic Rular Coder Checks-MTR -Continued

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Step	Ope au	ая	Normal indication	Custo ture proresser			
1.	Conti						
	e I	On the c	oder control panel, s	et the switches as indicated.			
		Şı	utch	Setting			
		PREKNO		IFST			
- 1			ND ORIGIN	NORVI VL			
		BURSI	ENABLE	NORMAL			
			Y CODE	Greater than 2			
ĺ		SELECT		PITCH			
2.			ATR transmitter.				
	d	On the	n saile track control	power supply, rotate the HV St PPLY knob to START			
	ь	Det ress	the HV SUPPLY C	N switch and adjust the HV SUPPLY knobits obtain an IAGNETRON meter			
3.	Set ti	Set the receiver gain.					
	On t	he m ssa ve the re	e track control pow ceiver noise from th	er supply adjust the receiver GAIN control to just barely e range indicator			
4.	Prepa	Prepare the computer for data transmission of orders to the coder					
	d	Have the	computer operator	perform the procedures in b through d below			
	ь	On the l	eyboard/display, en	ter 7 and depress CR.			
	C.	Enter Co	OD and depress CR.				
	d.	Enter Pt	CH and depress CR.				
5.		Measure the accuracy of the pitch G orders transmitted by the computer as generated by the coder.					
	a,	Observe	the range indicator.				
			Four pulses are	present.			
				Refer to figure 36.			
	, 5	Adjust (he MTR range hand	wheel to center the number 2 pulse in the range notch			
	c,	Set the	range MAN—AID—A	LUTO switch to AUTO			
	d	On the	MTR RSPU, venfy t	hat the COORD SELECT switch is set to D-PCN			
	ı e	Record	the setting of the M	IR RSPUBEACON DELAY switches			
	1	Adjust	the BEACON DEL	AY switches and momentarily depress the ENTER switch			

until the COORD DISPLAY indicates 0 yards.
g. Set the MAN-AID-AUTO switch to MAN

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(U) Table 5:20 Nonperiodic Rodar Coder Checks-MTR-Continued

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Strp	€ perasson	Normal and cation	Correctore princedure	
5.	Continued			
	6 The 1.+	and bullets, many also store of the		

h The 1sting below provides the distance between the number 2 and number 4 pulses for various patch G order commands provided by the computer. The commands provide a check to determine if each digit bit is being properly loggled.

Note. The computer CODER TEST number can be advanced sequentially by a mucaneously operating the CTL and Cike, so the correct step change, set the range MAN, AID-AL TO switch to MAN.

Coder		P-G
test no.	Range	order
11	14,385	06
12	14,344	.00
13	14,385	06
14	14,426	12
15	14,508	24
16	14,672	49
17	14,999	97
18	15,655	1 94
19	16,967	3 89
20	19,589	777
21	20,081	8 50
22	20,040	8 44
23	14,344	00
24	14,303	06
25	14,262	12
26	14,180	- 24
27	14.016	- 49
28	13,688	97
29	13,032	1 94
30	11,721	3 89
31	9.098	7 77
32	8,606	8.5
33	8,647	-8.44

To determine the distance between the number 2 and number 4 puises and the order accuracy center the 4th putch pulse in the range notch and set the range MAN_AID—AUTO_Switch to AUTO_Read the range directly on the MTR_RSPL_COORD_DISPLAY

The measured range is within 30 yards of the value in h above

Refer to figure 36

Upon completing the checks, depress CTL and 2 simultaneously to obtain the CODER menu

Measure the accuracy of the yaw G orders transmitted by the computer as generated by the coder.

a. On the coder control panel, set the SELECT switch to YAW

(11) Table 5 20. Nonperiodic Radar Coder Checks-MTR: Continued

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5 00	Operation	Normal Indication		Corrective procedure		
6	Continued					
	b From the CODER menu on the computer keyboard display, select YAM and depres CR CODER TEST 34 should appear on the indicator					
	To determ no the distance between the number 2 and number 4 vaw pulses repeture procesures in step 5 above substituting yaw for pitch. The data to be used given below.					
	B	Coder		Y G		
		test no	Range	order		
			•			
		34	14.385	06		
		35	11314	00 06		
		36	14 385	12		
		37	14 426	24		
		48	11,508			
- 1		39	14,672	49		
		40	1 , 999	97		
		41	15 655	1 94		
		42	16,967	3 89		
		43	19 589	7 77		
		44	20 081	8.5		
		45	20 040	8 44		
		46	14.344	00		
		47	14 303	06		
		48	14 262	- 12		
- 1		49	14,180	24		
		50	14,016	- 49		
		51	13,688	97		
		52	13,032	-1 94		
		3 3	11,721	3 89		
		54	9,098	177		
		55	8,606	8.5		
- 1		56	8,647	-8 44		
	d Set the range MAN-AID-AUTO switch to MAN.					
7	Reestablish	the computer statu	в.			
- 1	Notify the c	omputer operator	that the check	s have been completed		
8	Deenergize (he MTR transmitte	er,			
	Rotate the f	IV SUPPLY Knob	to START and	depress the HV SUPPLY OFF switch		
9.	Reestablish	the switch position	5.			
	a. Set the	AGC-MANUAL s	witch to AGC			
	b On the	mass le error voltaj	ge monitor, set	the PRESET switch to 1		

(U) Table 5-20 Nonperiodic Rodar Coder Checks-MTR-Continued

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7	Operation	Normal indication	Corrective procedure
	Contin	ied	
	574	teh to BOTH	he PREKNOCK switch to NORMAL and the SELECT
	a V	rify that the assigned battery o	ode is set into the BATTLRY CODE switches
	e O	the MTR RSPU set the BEAG ove Depress the ENTER push	(ON DELAY switches to the setting noted in step be

et , Table 5-21 Nonperiodic Missile Track Control Power Supply Checks-MTR

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Step	Opera	tion	Normal indication	Corrective procedure		
1.	Prepare for the check.					
	*a	left or	otective screen	ower supply to the service position and remove th		
	*b		the HV SUPPLY knob to sush holder plate	START and observe the positions of the stops of		
			All brush arms are posi	tioned against the stops.		
				Loosen the set screws and position the brush arms against the stops. Tighte the set screws.		
*	46	Power Power	the proteetive series remo- the proteetive series remo-	red in a above and sude the missile track contro position in the console.		
	d.	Perfor	m the procedures in table 2-1			
2.	Ene		e transmitter in the target mo			
	a	On th	e missie error voltage monito	r, set the BEACON-TARGET switch to TARGET		
	b	On th	e missile track control-pow	er supply, depress the HV SUPPLY ON switch		
	с	Adjus meter		obtain an indication of 3 ma on the MAGNETRO		
3.	Che	eck the	variac mechanical stop.			
	Comet	aution ! ter Exce	in the following procedures, do r saive high voltage may permanentl	of exceed an indication of 15.5 kv on the MAGNETRO y damage the magnetron.		
	a.	Opera	te and hold the MAGNETRO	N switch to KV FS=20		
	ь		y rotate the HV SUPPLY ko st exceed 15.5 kv	ob clockwise until the mechanical stop is reache		
	1		The mechanical stop is	reached between 15 and 15.5 kv.		
				Perform the procedures in step 4 below		

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3.	Cor	ntinued		
	c.	Re.ease	e the MAGNETRON switch	
	7	Aljus	the HV SUPERY mich for	in indication of 3 major the MAGNETRON meter-
	4	Procee	d to step a below	
4.	Adj	ust the v	variac mechanical stop.	
	a.	Rotate	the HV SUPPLY knob to S	TART
	b.	Depres	s the HV SUPPLY-OFF sw	teh
	*	On the	bss. e track control power	supply, set the IND HV switch to OFF
	el.	Partiall	ly pull out the missile track	control-power supply
	e	Locate	the adjustable stop on the v	ar av metal disc and loosen it
	f	Repeat	t step 2b and c above	
	8	Operat	te and hold the MAGNETRO	N switch to KV FS=20
	h	Slowly	rotate the HV St PPLY koo	b to obtain an indication of 15 25 kv
	L	Note t	he exact position of the HV	SUPPLY knob.
	1	Releas	e the MAGNETRON switch	
	k.	Rotate	the HV SUPPLY knob to S	TART
	- 1	Depres	ss the HV SUPPLY OFF sw	tch
	m		the stop so the maximum is in above	clockwise travel of the HV SLPPLY knob is the \ensuremath{L}
	n	Tighte	n the restrain ng screw	
	0	Insta	the missile track control po-	ver supply
*	P Rec	Repeat establish	t steps 26 through 3 above the switch and variac position	corpy of the highest hand by the time of the E.
	а	Rotate	the HV SUPPLY knob to	START and depress the HV SUPPLY OFF switch
	ъ.	On the	missile track control power	supply set the IND HV switch to ON
	e	On the	m sale error voltage monit	or, set the BEACON TARGET switch to BEACON

el. Table 5-22. Nonperiodic Target AFC Adjustments. TRR

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LED.	Alberta con	Romas Inducation	Corrective procedure	
1.		the TRR target AFC checks. procedures in table 2-1		
2		I nement of magnetron A to to procedures in table 3-14, ste		

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(L') Table 5-22 Nonperiodic Target AFC Adjustments: TRR: Continued

Scep	Opera	N.O.P.	Norma) indicas on	(americae procedure
3			nement of magnetron B to t	~
	Perf	orm the j	procedures in table 3-14, ste	p a
	No	te. The fo	lowing checks will require a roll	me er
1	Che	k the ad	justment of the channel A p	reset voltage
	а		meter contro, indicator in th MITTER switch to A FAST	e range RF contro- power supply set the A NIN
	ь		meter control nd cator oper tune the magnetron to the up	rate and hold the FREQ switch to the INCR pos pper frequency stop.
	ć	On the	A target AFC, disconnect the	e coaxial cable from J14
	ď			continued between TP5 VTO MON +) and The lead of the voltmeter to TP5

 $fU, Table \ 5.22. \ Nonperiodic \ Target \ AFC \ Adjustments-TRR-Continued$

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Step	C peration.	Normal indication	Corrective procedure
4	Continued		
		The voltmeter indicates	between +7.5 and +8.1 volts.
			On the magnetron tuning drive, loose the holddown screws for R8 (R1 for channel B). Rotate the resistor body to obtain an indication of +7.8 volts of the voltmeter. Tighten the holddown screws
			Cautron The variable resistor ha internal stops, if significantly mal adjusted, the stops will be sheared of damaging the resistor Refer to figure 74.
	e. Tune th	e magnetron to the low freq	uency stop.
		The voltmeter indicates	s between -0.2 and -1.0 volts.
			Repeat b, d, and s above Perform th corrective procedure in d above Refer to figure 74
	f. Disconn	ect the voltmeter leads from	TP5 and TP6
		ect the coaxial cable to J14	
5.	Check the ad	justment of the channel B fi	requency preset voltage.
	Perform the	procedures in step 4 above, s	substituting B for A
6	Check the re-	ceiver A AFC crystal current	t.
		TUNING TRANSMITTER ately the midband frequency	switch to A FAST and tune magnetron A to ap
	b Set the	XTAL CURRENT switch to	each position for RCVR A CR5 through CR8
		The XTAL CURRENT for each crystal.	Γ meter indicates a value between 40 and 100 μ
			Perform the procedures in table 4-21 step 3a, Disregard the AFC lock check
			Refer to figure 74
	c. Set the	XTAL CURRENT switch to	METER OFF
7	Check the re	ceiver B AFC crystal current	t.
		the procedures in step 6 ab	
		TUNING TRANSMITTER	
		range antenna support base ten to NORMAL.	, set the BLOWER switch to ON and the ANTEN

Note. If the daily check requirements can be met, proceed to step 15 below. If problems still persist,

Perform the daily TRR target AFC check procedures in table 2-23.

8

proceed to step 9 below

(U) Table 5-22 Nonperiodic Target AFC Adjustments-TRR-Continued

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Stop	Oper	ation Normal Indication	Carrective procedure				
9.	Esta	Establish the switch settings.					
	а	On the range radar power of	be range radar power control indicator, set the switches as indicated				
		Switch	Setting				
		TEST-OPERATE	TEST				
		RANGE ZERO	OFF				
		PULSE	LONG				
		REC INPUT	ANT				
		RADAR GAIN	MAN				
		NOISE OUTPUT	RADAR				
	b.	On the TRR IF test generat	or, set the switches as indicated				
		Switch	Setting				
		OSC	ON				
		MODE	PULSE				
		PULSE WIDTH	LONG				
		SLEW RATE	OFF				
		0-90 dB ATTENUATOR	10				
		0-9 dB ATTENUATOR	0				
10.	Check the A target AFC IF lock-on channel.						
	а	o On the IF test generator disconnect P52 from J4 ATT OUT. Connect a coaxial from J4 ATT OUT to the FRR IF T65T jack (located under the test oscillosi Set the COARSE IF FREQ ADJUST control to 0.					
	ь	On the range antenna support base, set the ANTENNA switch to DISABLE BLOWER switch to OFF					
	c	On the TRR meter control-	indicator, set the PULSE switch to LONG				
	d	On the A target AFC, disco	nnect the coaxial cable from J3-IF IN				
	ť	Connect a coaxia, cable fro of the range RF control-por	m J3-F IN to J5 B (located in the top front-center section wer supply group) ${\bf r}$				

11. Check the A target AFC de balance,

- On the A target AFC, disconnect the coaxial cable from J6
- b On the A target AFC connect a voltmeter between TP2 (DC BAL) and TP7 (GND) Connect the positive meter lead to TP2

On the A target AFC, the AFC LOCK indicator is illuminated.

Refer to figure 74

. , Table 5-22 Nonperiodic Target AFC Adjustments-TRR-Continued

N P	4 - 1	a n	No manded and o	s receipt to t				
11.	Cor	ntinued						
			The voltmeter indic	ates between plus and minus 150 milhvolts.				
				On the A target AFC, adjust the OFF SET TRIM variable resistor for an indi- cation as close to zero as possible				
				Vote The advantment range for the OF SET TRIM variable resistor is small and in may not be obtainable Refer to figure 74				
		D						
	0			of disconnect the voltmeter are if the label acided in 10a above and necessity				
	1		14 ATT OUT	her the are acued o too anove and it is ex-				
12	Che	ck the A	target AFC sample and h	old delay adjustment				
	а							
	b			tree in thater lagges the RATAR GAN control to also you'denotes NOISE OF THE Limiter				
	r	nd cat a		the FINE AFFREQ ADJUST control for consection of motor. Set the MODE switch to PULSE and the to 10.				
	d On the IF test generator disconnect F53 from J4 ATT OUT. Connect a loan all from J4 ATT OUT to the IRR IF IFST, as knowated under the test csc. as a loan and loan are the test csc. as a loan and loan are the test csc. as a loan are the test csc. as							
'	<	10 ture		REQ TRIM variable resistor 20 turns (look wise to a set the S.H. STROBE TRIM variable resistor 20 turn				
	- /	Adjust t	the COARSE IF FREQ A	DJUST control to .5.				
	g white observing the voltar eter air ist the S H STROME TRIM variable resist							
		wise to the initia COARS	btain the first positive all setting of the variable ETF FREQ ADJUST	scrage maximum. The first maximum may be to resister. If the voltage exceeds +15 velts adjust to ortholitization of about an indication of apins s. S.H. STROBE TRIM adjustment.				
- 1	h		IF test generator, discond I4 ATT OUT	nect the coaxial cable added in d above and reconsider				
		Repeat	the procedures in a throu	gh d above,				
	1		bserving the volumeter, in indication of 0 volts.	adjust the S.H. STROBE TRIM variable resistor to				
	k	While of to +2	bserving the voltmeter is	d,ust the COARSE IF FREQ control to 2 and the				
			The voltmeter indic	ales at least +4 volts and -4 volts.				
				Repeat a through k above				
				Refer to figure 74.				
	Į	Disconn	ect the voltmeter leads for					

(U) Table 5-22. Nonperiodic Target AFC Adjustments-TRR-Continued

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Step	Operation Corrective procedure
12	Continued
	m Disconnect the coaxial cable between JS B and J3 IF IN on the A target AFC
	Reconnect the coax.a. cable disconnected in step 10a above, to J3-IF IN
13	Check the AFC lock-on of the A target AFC
	Perform the daily target AFC check procedures in table 2-23
14	Check the B target AFC iF lock-on channel, de balance, and sample and hold delay adjus- ment
	Perform the procedures in steps 10 through 13 above, substituting B for A
15.	Check the A target AFC discriminator center frequency,
	a Verify or set the switches on the range radar power control indicator as indicated
	Switch Setting
	PROF. 0222 ATT

- b If the TRR antenna receiver transmitter door is open, verify that the PULSE switch on the meter control indicator is set to LONG and the TRANS ON ANT switch is set to A
- c. Energize the magnetron A transmitter.
- d Connect a coaxial capte between the TRR VID jack on the TRR control cabinet and the vertical input of the test oscilloscope. Adjust the test oscilloscope controls for a range zero pulse which is at least 1/2 division wide at the 80-percent amputude points, and at least 4 divisions high.

The range zero pulse is rounded on top without any sharp spikes visible above the 80-percent points. The pulse is symmetrical above the 80-percent points.

The range zero pulse amplitude jitter is less than 10 percent of the pulse amplitude,

On the range antenna support base, verify that the ANTENNA switch is set to DISABLE and the BLOWER switch to OFF. On the A target AFC, adjust the FREQ TRIM variable resistor If the adjustment range of the FREQ TRIM variable resistor is insufficient, perform the procedures in steps 9 through 12 above. Repeat step 15

C3

Refer to figure 74

(U) Table 5-22. Nonperiodic Target APC Adjustments-TRR: Continued

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Step) pe	rstian	Notices indication	Corrective procedure
16			arget AFC discriminator cen procedures in step 15 above,	•
17,	Re	turn the Ti	RR to normal operation.	
	а	On the set to RI		ify that the TUNING TRANSMITTER switch is
	ь		ange antenna support base, ENNA switch to NORMAL	verify that the BLOWER switch is set to ON and
	с	and the		connect the coaxia cable between J4 ATT OUT 2 to J4 ATT OUT. Set the OSC switch to OFF citch to 90
	ď		ect the coaxial cable from the test oscilloscope	the TRR VID jack on the TRR contro, cabinet
	É		TE, the RANGE ZERO sw	endicator, set the TEST-OPERATE switch to open to OFF, and the NOISE OUTPLT switch

(U) Table 5.23 Nonperiodic Ferrite Switch Adjustments-TRR

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itep	Ope	ratios	Normal andication	Corrective procedure			
1	Prepare for the ferrite switch adpustments.						
	a.	Perform	the procedures in table 3-14	1, steps 2 and 3			
	b	On the	range radar power control in	dicator, set the REC INPUT switch to ANT			
	с		range antenna support bas or to LONG	se, set the PULSE switch on the meter control			
	d	Using t	he FREQ switch on the mete	r control-indicator, tune both magnetrons to F1 4			
2	Perform the ferrite switch adjustment,						
	а	Connec	t a voltmeter between TP1 o	n the tuning switch driver and ground			
			The voltmeter indication	n is between +0.4 and -0.4 volts.			
				Adjust A trim adjust variable resistor R17 on the tuning switch driver.			
				Refer to figure 71.1			

Connect the voltmeter between TP2 and ground,

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(U) Table 5 23 Nonperiodic Ferrite Switch Adjustments TRR-Continued

		UNC	LASSIFIED					
ate	'Ipera	on Norma nava ion	Cornective procedure					
2.	Cont	Continued						
		The voltmeter in	fication is between +0,4 and -0.4 volts.					
			Adjust B trim adjust vanable resistor R8 on the tuning switch driver Refer to figure 71 1					
	c	Disconnect the voltmeter						
	cŧ							
	The voltmeter indication is between +0.4 and −0.4 volts. Adjust B trim adjust variable resistor R8 on the tuning switch driver Refer to figure 71.1 Disconnect the voltmeter Joseph PAN NO LOSS switch to MAN On Lor Refer to rest set the SCALE obswitch fully clockwise Cal traft the RE power test set by performing the procedures in table 3.14, step 66 through e On the countermeasures controllands ator, depress the MAG A HV ON switch Adjust the MOD VilV knob to obtain an indication in the center of the green block on the MAG A meter On the ferale switch driver assembly, set the ADJ A-NORM switch to ADJ A and the ADJ C-NORM switch to NORM On the ferale switch driver assembly hold the TEST ADJ B OPERATE switch in the TEST ADJ B post on, and adjust the ADJ A variable resistor to obtain an indication as near ∞ (null) as possible on the RE power test set. The test set meter indication is between ∞ and 6 db. Refer to figure 71.1, A sing the FREQ switch on the meter control indicator, then magnetron A to Fa the TeST ADJ B position and adjust gain adjust A variable resistor R13 on the tuning switch driver to obtain an indication as near ∞ (null) as possible on the RE power test set. The test set meter indication is between ∞ and 6 db. Refer to figure 71.1. Repeat steps 1d, 2a, c, and j through l above: Refer to figure 71.1. Repeat steps 1d, 2a, c, and j through l above: Refer to figure 71.1. Repeat steps 1d, 2a, c, and j through l above: Refer to figure 71.1.							
	- /		set by perferming the procedures in table 3.14, step 66					
	K	On the countermeasures conti	o. andicator, depress the MAG A. HV ON switco					
	-0		to obtain an indication in the center of the green block					
	(
	′	the TEST ADJ B poston, ar	d adjust the ADJ A variable resistor to obtain an indi-					
		The test set mete	r indication is between % and 6 db.					
			Refer to figure 71.1.					
	J ₂	ics ng the FREQ switch on th	meter control and cator, tune magnetion A to Fo					
	1	the TEST ADJ B position	and adjust gain adjust A variable resistor R13 on the					
		power test set.						
		The test set mete	· · · · · · · · · · · · · · · · · · ·					
	1							
			~					
	q.							
	1	MAN - BANT NO TORO						

MAN-PAN NO LOSS switch to PAN NO LOSS. On the RF power test set, set the ADJ MEAS switch to MEAS.

Set the ADJ C-NORM switch to ADJ C Hold the TEST ADJ B -OPERATE switch in the TEST ADJ B position and adjust

the ADJ C variable resistor to obtain an indication as near in (mall) as possible on the RF power test set.

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(U, Table 5-23 Nonperiodic Ferrite Switch Adjustments-TRR Continued

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Step	Oper	ion Normal pourador Confronce procedure
2.	Con	unued
		The test set meter indication is between ∞ and 6 db.
		Refer to figure 71 1,
	a.	Set the ADJ C-NORM switch to NORM
	U.	On the RF power test set, set the ADJ-MEAS switch to V
	č4.	On the meter control indicator, set the AUTO-MAN, PAN NO LOSS switch to MAN.
	х	Rotate the MOD A HV knob fully countercockwise and depress the MAG A-HV OFF switch
	3	Depress the MAG B-HV ON switch and adjust the MOD B HV knob to obtain an indication in the center of the green block on the MAG B meter
	2.	On the RF power test set, set the ADJ-MEAS switch to MEAS
	aa.	Hold the TEST ADJ B-OPERATE switch in the TEST ADJ B position and adjust the ADJ B variable resistor to obtain an indication as near ∞ (null) as possible on the RF power test set.
		The test set meter indication is between ∞ and 6 db.
		Refer to figure 71, 1
	ab	On the meter control indicator, set the TUNING TRANS switch to B FAST. Using the FREQ switch, tune magnetron B to ${\rm F5}$
	αε	Hold the TEST ADJ B—OPERATE switch in the TEST, ADJ B position and adjust gain adjust B variable resistor R4 on the tuning switch driver to obtain an indication as near ∞ (null) as possible on the RF power test set.
		The test set meter indication is between ∞ and 6 db.
		Refer to figure 71,1
	ad.	Repeat steps 1d. 2b, c, and an through ac above.
	ae	Rotate the MOD B HV knob fully counterclockwise and depress the MAG BHHV OFF switch
	af	On the RF power test set, set the ADJ MEAS switch to ν and the SCALE db switch to 0
	ag	On the meter control-indicator, set the TUNING TRANS switch to REMOTE
3.	Reti	um the TRR to normal operation.
	On swit	the range antenna support base, set the BLOWER switch to ON and the ANTENNA in to NORMAL

(U) Table 5-24 Nonperiodic Lin-Log Receiver Checks-TRR

		UNCLASS	IFIED	
Step	Operation	Normal ardication	Corrective procedure	
1		he TRR lin-log receiver check the procedures in table 2-1	rs.	

tl. Table 5-24 Nonperiodic Lin Log Receiver Checks: TRR Continued

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Sten) per	rasion No mai ini	carective procedure				
1.	Cor	Continued					
	a I	power control whicator, rotate the RADAR GAAN knob funly					
	- 6	On the range radar p	ower control indicator, set the switches as indicated				
		Switch	Setting				
	c.	Switch OSC	OFF MAN SHORT MAN RADAR NOISE LAMP generator, set the switches as indicated Setting OFF				
			YOR 0				
	d	Operate the FREQUE	IENCY DCR-,NCR sw.tch to lune MAG B for an indication of NCY meter				
	e		witch to A and the FREQUENCY A B switch to A. Tune MAG if 2.8 on the FREQUENCY meter				
2.	Adj	ust the logarithmic an	plifier de balance.				
	a,	(Deleted)					
	b	Adjust the arge ME OUTPUT meter	TER ZERO control to obtain an indication of 0 on the NOISE				
		The larg	e METER ZERO control is near midrange.				
			Out the last remains where a last				

Set the large METER ZERO control to approximately midrange. On range log arithmic IF amplifier A7 in the TRR receiver subassembly, adjust the DC OFFSET control to obtain a NOISE OUTPUT meter indication of 0.

C2

Refer to figure 74.

(b) Table 5.24 Nonperiodic Lin-Log Receiver Checks-TRR Continued

			<u> </u>		
Sir	pera 10ff	Normal Indication	Corrective procedute		
3	Check the channel A noise power received from the antenna				
		st the RADAR GAIN knob to obtain	in an indication of 100 on the NOISE OLT		
	ь On ra	ange linear IF amplifier A3, disconne	et P25 from J3-IN A		
		The NOISE OUTPUT meter	indication is less than 35		
			Refer to figure 74		
	c Reco	nnect P25, disconnected in b above,	to J3-IN A		
4	Check the	channel B noise power received from	n the antenna		
	a Set th	ne MAG SEL switch to B			
	b. Reper	at step 3 above			
5		gain of the range linear IF amplifier.			
		he MAG SEL switch to A			
		he PULSE switch to LONG			
	c Set th	he RADAR GAIN switch to LIN LO			
		The NOISE OUTPUT meter	indicates between 40 and 65		
			On range linear IF amplifier A3, adjust the GAIN ADJ control to obtain an indication of 50 on the NOISE OUT PUT meter		
			Refer to figure 74		
6	Set the TR	R IF test generator to the long puls			
		e TRR IF test generator, set the OS			
		te RADAR GAIN switch to MAN			
	e Adjus NOIS	st the RADAR GAIN knob to obta E OUTPUT meter	in an indication of approximately 80 on the		
	d On the	he TRR IF TEST generator adjust n a maximum indication on the NOI	t the FINE IF FREQ ADJUST control to SE OUTPUT meter		
7		insertion loss difference between the			
	a. Adjus PUT r	it the RADAR GAIN knob to obta meter	in an indication of 100 on the NOISE OUT-		
		ne PULSE switch to SHORT			
	c On th	ne TRR IF test generator, adjust the or to 100 as possible on the NOISE (e attenuator switches to obtain an indication OUTPUT meter		
		The attenuator switches indi-	rate between 19 and 23 db.		
			Refer to figure 74		
	d Set th	ie 0-90 dB ATTENUATOR switch i	to 90 and the OSC switch to OFF		
		e the RADAR GAIN knob fully cou	nterclockwise		
8.	Energize th	ie A transmitter.			
	a Set th	e REC INPUT switch to ANT			

(U, Table 6.24 Nonperiodic Lin Log Receiver Checks-TRR-Cont mucd-UNCLASSIFIED

atro	Operation Normal Inc. au n. Corticcu e procedure					
8.	Continued					
	 b O The countermeasures control and cauor, rotate the MOD A HV knob fully counter clockwise and depress the MAG A IHV switch 					
	 c Adjust the MOD A PV know to obtain an indication in the center of the green biods on the MAG A meter. 					
9.	Check the video gain of the range logarithmic IF amplifier					
	a See the Pu LSE switch to LONG and the RADAR GAIN switch to 14N LOG					
	$-\delta = c s n_B$ the lest oscilloscope, a shay the transmitter pulse by monitoring the Tigal palmet TRR VID jack					
	The transmitter pulse amplitude is between +4 25 and +4 75 volts,					
	On range logarithmic IF amplifler A7 adjust the VIDEO GAIN variable resis for to obtain a +45 voit transmitte pulse amplitude. Refer to figure 74					
	e Disconnect and turn off the test oscilloscope,					
10	Check the transmitter pulse amplitude on the target range indicator.					
	a. Observe the lower sweep on the TTR target range indicator					
	The complete transmitter pulse is visible.					
	Perform the procedures in table 4-23 step 4,					
	The transmitter pu se amplitude is between 1-1,4 and 1-1/2 inches.					
	On the TTR RSPU, adjust variable resistor R4 on A23					
	Refer to figure 52					
	b. Verify that the TTR RSPU MODE switch is set to OPR					
11.	Deenergize the A transmitter.					
	On the countermeasures control indicator, rotate the MOD A rIV knob fully counter-clockwise and depress the MAG A-HV OFF switch					
12.	Reestablish the switch positions.					
	Set the TEST OPERATE switch to OPERATE and the NOISE OUTPUT switch to OFF					

(U, Table 5-25 Nanperiodic Panoramic Receiver Checker-TRR
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Step	Operation	Normal endiration	Cornelive protedure
1.		the panoramic receiver cher in the procedures in table 2	

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(U) Table 5-25 Nonperiodic Panorumic Receiver Checks: TRR-Continued

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Scep	4 remarkson	Number indication		recute procedure		
I	Continued					
		he remainde of this table indicator unless otherwise		, and me ers are located on the range rada-		
	b. Set the	switches as indicated				
	Ste	vitch	Setting			
		OPERATE	TEST			
		OUTPUT	PIN			
	REC IN		ANT			
				tch is set to OFF		
2.						
۲٠	Check the pan logarithmic amplifier de halance a. Rotate the PAN GAIN control fully counterclockwise					
			T			
		The small ME IFR 25	KO compor to opes	un an indication of 0 on the NOISI		
	The small METER ZERO control is near midrange,					
			(1)	Shightly change the A and B magne tron frequencies		
			(2)	Set the small METER ZERO control to approximately midrange On pan logarithmic IF amplifie A2, adjust the DC OFFSET variable resistor to obtain a NOISS OUTPUT meter indication of 0		

3 Check the noise power received from the antenna

- a Adjust the PAN GAIN control to obtain an indication of 100 on the NOISE OUTPUT meter
- On pan linear IF amplifier A1, disconnect P23 from J6-IN B

The NOISE OUTPUT meter indication is less than 40.

Slightly change the A and B magnetron frequencies

Refer to figure 75

Reconnect P23, disconnected in b above, to J6-IN B.

Check the gain of the pan linear IF amplifier

Set the PAN GAIN switch to LIN LOG

The NOISE OUTPUT meter indicates between 60 and 80.

On pan linear IF amphfier A1, adjust the GAIN ADJ variable resistor to obtain an indication of 70 on the NOISE OUTPUT meter. (U) Table 5-25 Nonperiodic Panaramic Receiver Checks. TRR. Continued

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5.0	s he all in the Strong of Carlon	ut e in e peaneulaire
5	Check the video display on the countermeasures con	ntrol indicator
	b. Observe the uplier sweep of the evaluation is are	
	The receiver noise amphtude is bet	On the countermeasures video

On the countermeasures video amplifier, adjust the PAN VIDEO GAIN variable resistor If the adjustment range is insufficient, adjust the VIDEO GAIN variable resistor on pan logarithmic IF amplifier A2

Refer to figure 75

Two sets of stable frequency pips are present.

Perform the procedures in table 3.15

The amplitude of the frequency pips is approximately 3/4 of an inch

On the range receiver transmitter panoramic frequency mixer stage, adjust variable attenuator AT2

Refer to figure 76

6 Reestables the switch positions

Section TEST OPERAGE SWIFTED OPERALE.

(U, Table 2 25 (Inh led)

(U, Table 5-27 Nonperiodic Modulator High Voltage Limiter Checks- TRR

Step	OÞ	eration	Normal indicate	lton	Corrective procedure	
1.	Prepare for the high voltage limiter checks,					
	a.	Perform	the procedures	in table 2-1		
	b	On the fully cor	ountermeasures unterclockwise	s ontrol indicator,	rotate the MOD A HV and MOD B HV knobs	
1	c	On the t	arget range sync	hronizer, disconnec	et P15 from J3	

(L., Table 5-27 Nonperiodic Modulator High Voilage Limiter Checks: TRR: Continued

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itop	Operation	Normal industries	Corrective procedure			
2.	Check the modulator A high voltage limit.					
		frame of the countermeasurate the A HV LIM variable re	es control indicator, near the pulse sweep sistor fully counterclockwise	gener		
	b. Depres	s the MAG A-HV ON switch				
		The MAG A-READY ON indicator light illun	indicator light extinguishes, and the MAG anates,	A-H		
			Refer to figure 87.			
			er control-indicator, the HIGH VOLTAGE DY A indicator lights extinguish.	S-PR		
			Refer to figure 87.			
		e the MAG A meter switch tully clockwise	o MOD A HV and slowly rotate the MO	DAH		
		rotate the A HV LIM variat in the right edge of the green i	In resistor clockwise until the MAG A me block.	ter inc		
	e. Release	the MAG A meter switch.				
	f Rotate OFF sv		counterclockwise and depress the MAG	A-14		
8.	Check the m	Check the modulator B high voltage limit.				
	g. Repeat	step 2 above for modulator l	3, substituting B for A.			
	b. On the	target range synchronizer, co	nnect P15 to J3.			

(U) Table 5-28 Nonperiodic Radar Test Set Group Checks

Step	Operation No.	rmal indication	Corrective procedure		
1.	Prepare the tracking station for the check.				
	Perform the procedu	res in table 2-1.			
2.	Prepare the radar tea	t set for the check.			
	Set the test set switch	hes as indicated			
	Switch	Setting			
	AC POWER	ON			
	FUNCTION	CAL			
	MODE	PULSE			
	PULSE TEST	PRIMARY			
	PULSE WIDTH	SHORT			
8, [Check the panel edge	e lighting			
	Depresa the LAMPS	pushbutton switch			

(U) Table 5-38. Nonperiodic Radar Test Set Group Checks-Continued

tep	Operation	Normal indication	Corrective procedure		
3.	Continued				
		The panel edge lamps u meter, and the MEAS F	the SIGNAL LEVEL switch, the RF POWER directly meter illuminate.		
			Replace the bulbs as required		
			Refer to figure 92		
4	Check the internal pulse test cucuits.				
	Note: An oscil oscipe Textron x 465 or equivalent) is T-connector (LG 274) and a 75-obm termination are equived for the following procedures. The ac power cord for the oscilladope should be plugged into the 120V RECPT connector on the radar last set front panel.				
	a Connect test set. ternal sy	Terminate the cable at the	alloscope to the RRFTS VIDEO ,ack on the rada a oscilloscope with a 75-ohm termination. Use in		
		A train of 0.25 ±0.1-n displayed on the oscillo	nicrosecond pulses spaced 5 ±0.5 microseconds secone.		
			Replace diods CR1 in the monitor d		
			tector.		
			Refer to figure 93		
	b. Set the	PULSE WIDTH switch to LO			
		A train of 2.5 ±0,2-m displayed on the oscillo	•		
			Refer to figure 98.		
5.	Check operation of the 10-db long-pulse attenuator (AT3).				
	1	PULSE WIDTH switch to SI			
		the CAL - adjustment (tar			
		the OUTPUT control and a Relock the OUTPUT contro	djust for an indication of 1 on the RF POWER (l,		
	d. Set the	PULSE WIDTH switch to Li	ONG		
	e. Set the	METER switch to 10 dBm	l,		
	Note: With the METER switch set to 10 dBm, random indications (less than 0,3 db) may occur on t RF POWER dB meter. This condition is acceptable.				
	f Perforn dBm	the CAL == adjustment (tai	ole 4-3, step 2) with the METER switch set to -		
	g. Verify	that the SIGNAL LEVEL aw	ritch is set to 00		
		The RF POWER dB m	eter indication is between 0 and 2.		
			Refer to figure 98		
6	Check the po	ower output cambration.			
	Perform the procedures in table 4-3, steps 10 and 11.				

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(U, Table 5-28. Nonperiodic Radar Test Set Group Checks-Commund

Step	Dp	ration	Normal andication	Corrective procedure		
*7.	Check the characteristics of the radar test set trigger pulse.					
	a	α On the missile control indicator group, set the switches as indicated				
		Sw	itch	Setting		
		TARGET-	STANDBY-	MISSILE		
		MODE	*	PULSE		
		SIGNAL I	EVEL	00		
		PULSES SLEW RA	TE	SINGLE 2500		
	b On the missile track control drawer, verify that the TEST switch is set to TEST					
	c	Connect an oscinoscope to terminal 214 in the radar power supply group (Termin 215 is ground.) Sync the oscillocope to the inisale preknock pulse (This pulse available at J43 on the missile side of the signal distribution panel in the radar group.) Use de coupling on the oscilloscope.				
	A single pulse (repeated at the MTR system prf) is display oscilloscope Pulse amplitude is at least 20 volts, peak-to-p width is 0.75 ±0.3 microseconds between the 50-percent points					
			ponted	Refer to figure 93.		
	ď					
		The oscilloscope displays a horizontal line at a level of +13 ±2 vdc.				
				Refer to figure 93.		
	e	Set the MODE switch to PULSE and the TARGET-STANDBY-MISSILE switch STANDBY				
	The oscilloscope displays a horizontal line at a level of -13 ±					
				Refer to figure 98		
	f On the missile controlandicator group, set the TARGET STANDBY switch to MISSILE. Momentarily operate the RANGE SLEW switch to IN to OUT.					
			when the switch	ise moves to the right (occurs later) on the oscilloss is operated to OUT, and moves to the left (or switch is operated to IN		
				Refer to figure 93		
	g Set the PULSES switch to DOUBLE					
			A single pulse (roscilloscope	epeated at the MTR system prf) is displayed on		
				Refer to figure 93		

(U) Table 5-28. Nonperiodic Radar Test Set Group Checks-Continued

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Sup	Operation	Normal indication	Corrective procedure			
7.	Continued h Set the SIGNAL LEVEL switch to 40 A pair of pulses (repeated at the MTR system prf) is displayed on the oscilloscope. The pulse shapes are similar. The second pulse is delayed from the first by 6.5 ± 1 microseconds. Refer to figure 93.					
8.	Check the transmission of the signal level commands. a Acquire the radar test set signal with the MTR by performing the procedures 2-15, steps 1 and 2. b With the SIGNAL LEVEL switch set to 00, observe the indication on the REC SIGNAL meter on the missile control-indicator group c Set the SIGNAL LEVEL switch in sequential steps from 00 to 09 For each step, the indication on the RECEIVED SIGNAL meterses. Refer to figure 93 d. Set the SIGNAL LEVEL switch to 00. set the SIGNAL LEVEL switch in sequentially increasing steps of 10 db in minimum detectable signal level is reached. For each 10-db step, the indication on the RECEIVED SIGNAL decreases. Refer to figure 93					
9.	Set the switc	hes on the missile control- Switch TANDBY—MISSILE	group for normal operation ndicator group as indicated Setting STANDBY 70			

(U) Table 6-29. Nonperiodic Track Data Processor Checks UNCLASSIFIED

Stop	Operation	Normal Indication	Corrective procedure			
Prepare for the track data processor checks.						
	Perform the procedures in table 2-30, steps 1 and 2.					
2.	Check the TRR/TTR parallax computation.					
	a. On the		ind.cator, verify that the TEST C	PERATE switch		
	Note: All av	ritches in this step are located on	the track data processor unless otherwi	se indicated.		

(U) Table 5-29, Nonperiodic Track Data Processor Checks-Continued

Step	Oper	mtlag	Norroal indication	Corrective procedure			
2	Cor	Continued					
	ь	Set MODE SWITCH to TEST TRR and the BANK SELECTOR switch to BANK 1.					
	Ø.		RR/TTR PARALLAX				
			The POSITION DI	FFERENCE (YDS) indicators indicate as follows:			
			$\Delta h = 00$				
			∆x = 66				
			∆y = 40				
				Refer to figure 78 1.			
	d.	Using a d	le voltmeter, measure nd (A4, TP1). Connec	the voltage between TP4 on printed wiring board A the positive meter lead to TP4.			
			The voltmeter indi	cates between +65.3 and +67.5 volts.			
				Refer to figure 78.1			
	e,	Set the T	RR/TTR PARALLAX	(YDS) switches as indicated			
		Switch	Sei	tting			
		N/S	N 5				
		E/W UP/DN	E 5	00 1 20			
		DF/DIN		· 			
				FFERENCE (YDS) indicators indicate as follows:			
			∆h = 00 ∧x = 34				
			$\Delta y = 40$				
				Refer to figure 78 1			
			The voltmeter indi	icates between +33,6 and +35 2 volts.			
				Refer to figure 78.1,			
	f	Set the N	I, S, E/W, and UP DN T	PRR PARALLAX (YDS) switches to S, W, and UP			
			The POSITION DI	IFFERENCE (YDS) indicators indicate as follows.			
			∆h = 00				
			$\Delta x = 98$				
			∆y = 40				
				Refer to figure 78 1.			
		-	The voltmeter indi	cates between +97,0 and +99,8 volts,			
				Refer to figure 78.1,			
	g.			ads connected in d above			
	h	TACTIC	AL	TOR switch is set to BANK 1 Set MODE SWITCH			
	L	Set the switches.		TTR parallax on the TRR/TTR PARALLAX (YD)			

(U) Table 5-29. Nonperiodic Track Data Processor Checks Continued

itep	Oppration	Nonnii Indicatio	on	Corrective precedule				
8.		Determine the source of data transmission errors.						
	Note. This step is to be performed only floats transmission errors between the TTH or MTR RSPU assemblies and the track data processor are suspected or detected							
	 Set the track data processor MODE SWITCH to the positions where data transmission errors are suspected or have been detected 							
	b Observe	the red LED ind	licator on pru	nted wiring board. A4 in the track data processor				
			dicator is not					
				The LED illuminating or flickering in- dicates that a data transmission error exists between the RSPU and track data processor. Perform the procedures in table 3-19, step 6.				
		Note If da	te transmission the track date	errors are suspected and the LED is not uluminated, the processor. Proceed to step 4 below				
				Refer to figure 78.1.				
	e. Perform	step 2h and ; ab	ove,					
4.	Identify the track data processor error messages.							
	 α. On the track data processor, observe the Δx and Δy POSITION DIFFERENCE (YDS) Indicators. 							
		The ∆x indi	icator indicat					
				if an EE indication is not present, the POSITION DIFFERENCE (YDS) in dicators are not displaying an erro message				
		The Av indi	icator indicat	es a number between 01 and 09.				
		ZEW ZE ZEW		Refer to the error messages listed in b below.				
	b Interpre							
	Δħ	Δy						
	Indication	Indication		Explanation				
	00	01	mode swite	se microcomputer cannot detect any front pan- ch condition or it detects multiple mode cond DP FAULT signal will be initiated. When the red, the error message is automatically cleared.				
	00	02	panel mode switch is	the microcomputer detected an unused from a switch condition. Usually indicates the BAN improperly set. A TDP FAULT signal will be when the fault is cleared, the error message lly cleared				

(U) Table 5-29. Nonperiodic Track Data Processor Checks-Continued

UNCLASSIFIED

Corrective procedure

Normal indication

Operation

Step

4.	Continued		
	∆h Indication	∆y Indication	Explanation
	00	03	Indicates that 3 or more out of 25 cycles of the senal data receiver output data contain the error message bit in an active state. This error message can occur only in the TEST SERIAL DATA REC, SIM TRACK, or TACTICAL modes Each time an error occurs, a TDP FAULT fault signal is initiated for approximately 1/2 second. The error message can be cleared by changing switch modes or by pushing the RESET switch.
	00	04	Indicates that 3 or more coordinate select codes are out of order in 26 cycles of the serial data receiver output. This error message can occur only in the TEST SERIAL DATA REC, SIM TRACK, or TACTICAL modes. Each time an error occurs, a TDP FAULT signal is initiated for approximately 1/2 second. The error message can be cleared by changing switch modes or by pushing the RESET switch.
	00	05	Indicates that data is present at the serial data receiver output, but the contents detected by the microcomputer are not of the expected bit test pattern. The error message is used only in the TEST SERIAL DATA REC mode A TDP FAULT signal is not initiated with the error message. The error message is cleared automatically if a correct data pattern is detected.
	00	06	Indicates that no data or excessively slow RSPU data is present at the serial data receiver output. The error message can occur only in the TEST SERIAL DATA REC, SIM TRACK, or TACTICAL modes. The error message takes precedence over all other errors except error 09. A TDP FAULT signal is initiated only in the TACTICAL mode. The error message is cleared automatically whenever proper data is received.
	00	07	Indicates that a problem exists in the circuitry associated with the data error bit from the serial data receiver to the microcomputer or in the circuitry associated with the CRC select bit from the microcomputer to the serial data receiver. The error message can occur only in the TEST SERIAL DATA REC mode. A TDP FAULT signal is not initiated with the error message. The error message is cleared whenever the fault is removed.
	1		

(U) Table 5-29. Nonperiodic Track Data Processor Checks-Continued

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Step	Operation	Normal indicati	lon Correction procedure		
4.	Continued				
	Δh Indication	Δy Indication	Explanation		
	. co	08	Indicates that the required count of target slant range ($D_{\rm T}$ data is not available. Whenever the microcomputer does no etect a select mode of $D_{\rm T}$ within 39 inputs, the error message is generated. The error message can occur in the TES: SERIAL DATA REC, SIM TRACK, or TACTICAL model Each time an error occurs, a TDF FAULT signal is initiate for approximately 1/2 second. The error can be cleared by pushing the RESET switch or by changing switch modes.		
	(yz)	09	The microcomputer performs some track data processor tests during the start-up sequence after each reset Any problems detected result in militating an error message. The specific problem detected is identified by the individual bits of a 6-bit hexidecimal code displayed in the Ah display. The bit sequence assignments are		
			Hexidecimal		
			bit position Detected error		
			0 RAM 1 PROM NUMBER 0 2 PROM NUMBER 1 3 PROM NUMBER 2 4 PROM NUMBER 3 5 CPU		
			A TDP FAULT signal is always initiated. This error message takes precedence over all other detected errors but can be creared by changing switch modes. Pushing the RESET switch will not clear the error message if the failure is recurring		
	¢. Perform	the procedures	in step 2h and l above,		

(U) Table 5-30 Nonperiodic Sond-State Low Voltage Power Supply Voltage Checks—TTR, MTR and TRR
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Step	Operation	Normal Indication	Corrective procedure			
1.	Prepare for the low voltage checks.					
	Perform the procedures in table 2-1,					
	Note. The	following checks will require the u	se of a dc vo.lmeter			

tl., Table 5-30 Nonperiodic Solid State Low Voltage Power Supply Voltage Checks-TTR MTR and TRR Continued

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Step	Opezation	Normal indication	Contraine brondure			
2.	Perform the TTR track low voltage power supply checks. a On the TTR receiver subassembly in the radar set group, connect a dc voltmeter to measure the voltage between the test points specified below					
	Test points	Voltage	On the TTR track low voltage power sup- pty in the radar power supply group			
	TP 1 to TP 7 (G) TP-2 to TP 7 (G) TP-5 to TP-7 (G)	(D) 15v ±0.3v				

b. On the TTR track low voltage power supply in the radar power supply group, connect a dc voltmeter to measure the voltage between the test points specified below.

Test points	Voltage	
TP-1 to TP-6 (GND)	+75v ±5v	Refer to figure 27 (MTR) or 58 (TTR).
TP-2 to TP-6 (GND)	-75v +5v	Refer to figure 27 (MTR) or 58 (TTR)

- Perform the MTR track low voltage power supply checks.
 Perform the procedures in step 2 above, substituting MTR for TTR.
- 4. Perform the RSPU power supply checks.

Perform the procedures in table 5-9.

5. Perform the coder/track data processor power supply checks.

On the concer track data processor power supply, connect a dc voltmeter to measure the voltages between the test points specified below

2	Test points	Voltage	
CODE	R +5V to GND	+5 2v ±0.3v	Adjust PS-1 ADJ POT variable resistor
TOP	+15V to GND	+15v ±0,3v	Adjust PS-2 ADJ POT variable resistor
TDP	+5V to GND	+5.5v ±0.3v	Adjust PS-3 ADJ POT variable resistor
TDP	-15V to GND	-15v ±0.4v	Refer to figure 27.
TDP	+12V to GND	412v ±0.3v	Refer to figure 27.
TDP	-12V to GND	-12v ±0,3v	Refer to figure 27.
TDP	-5V to GND	-5v ±0.3v	Refer to figure 27.

6. Perform the TRR solid state low voltage power supply checks.

On the ±15v, +5v power supply in the TRR control cabinet, connect a dc voltmeter to measure the voltages between the test points specified below

Test points	Voltage	
TP 1 to TP-4 (GND)	+15v ±0.3v	Adjust PS-1 ADJ POT variable resistor.
TP-2 to TP-4 (GND)	-15v ±0.4v	Refer to figure 82.
TP-3 to TP-4 (GND)	+5v +0 3v	Adjust PS 2 ADJ POT variable resistor

Table >30 Assignment Solid Start on volume Power Supply volume thecks: TTR MTR and TRR Continued

Step	Operation	Normal In	dicaston	Connective procedure			
7	On the rac	Perform the radar test set control-power supply check. On the radar test set control-power supply in the missile control-indicator group, connect a devolumeter to measure the voltage between the test points specified below					
	Test	points	Voltage				
	TP-4 to TI	P 1 (GND) P-1 (GND) P-1 (GND)	+5v ±0.8v +15v ±0.8v -16v ±0.8v	Adjust the +5V control Adjust the +15V control Adjust the -15V control.			
				Refer to figure 27			
8.	Perform tl	he B-scope pow	er supply checks.				
		restorer amp .i he test points গ		onnect a do voltmeter to measure the voltages			
	Test	points	Voltage	On the ±15v, +5v power supply on the slide in the upper center of the TTR console.			
		P-5 (GND)	+15v ±0 3v	Adjust the +15V control			
	TP 3 to T	P-5 (GND,	15v +0.8v	Adjust the +15V control			
	TP-4 to T	P-5 (GND)	+5v ±0.3v	Adjust the +6V control.			
9	Perform t	Perform the MTR and TTR antenna +15v and +5v power supply checks.					
	a On t	and the same of the same of the DICARIE and					
		b On the PS mon tor, connect a dc voltmeter to measure the vo tages between the test points specified below					
	Test	points	Vottage				
	+15V to <	GND	+15v ±0.8v	In the RF control-power supply group, adjust the ±15v power supply ADJ POT variable resistor.			
	15V to	GND	15v ±0.8v	Refer to figure 58 (TTR) or figure 27 (MTR).			
	+5V to G	ND	+3v ±0.3v	In the track receiver-transmitter, adjust the +5v power supply ADJ POT vari- able resistor			
	c Set 1	the BLOWER st	witch to ON and the	ANTENNA switch to NORMAL			
10	Perform t	he TRR +48v.	+15v, -15v, and +5v	power supply checks.			
	Acte To TRR anten outlet mov TY in the l	Acte. The +48% +15% and 15% power supplies are located in the tower part of the pedestal in the TRR artenna. Access to the power supply adjustments can be made by removing the 40%-Hz convenience outlet mounting pure on the pedestal. Prior to removing the panel remove fuse F14 STBY PWR-DTLL TV in the trailer range radar power control indicator. The center power supply is the +15% power supply.					
		toe TRR anten IWER switch to		the ANTENNA sw tch to DISABLE and the			

U) Table > 30 Nonperious Soud State Low Forting Power Supply Vodage Checks—TTR, MTR and TRR-Continued

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Stap	Operation	Normal industrian	Corrective procedure					
10.	Continued							
	b On the property	b On the range RF control power supply group connect a devoltmeter to measure the voltages between the test points specified below						
	Test poi	nts Voitage						
	+48V to GNI	+48v ±3v	Refer to figure 82,					
	+16V to GNI) +15v ±0.3v	Adjust the +15v power supply ADJ POT variable resistor					
	-15V to GNI	D -15v ±0 8v	Adjust the -15v power supply ADJ POT variable resistor					
	+5V to GND	+5v ±0.8v	Adjust the +6v power supply ADJ POT variable resistor.					
- 1	c. Reinstall	et mounting panel.						
		ie ANTENNA switch to NORMAL						
			LITY) in the range rudar power control indicator					

(U, Table 6-81 (Deteted)

IU, Table 5-32 (Deleted,

CHAPTER 6 (C)

SPECIAL CHECK PROCEDURES

(U) Table 6-1 Special Magnetron Tuning Drive Torque Check-TTR and MTR

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Step	Öpstatlön	Norma Indication	Corrective procedure				
1,	Prepare for	Prepare for the tuning drive torque check.					
	a, Perform the procedures in table 2-1						
	6 On the target auteuna support base, set the ANTENNA switch to D SABLE.						
	e. Remove the knowled coupling to a sconner, the flexible cable from the magneticer						
2	Perform the tuning drive torque check.						
	Note: The torque wrench adapter (TA 3.5 and TA 316.) clotated at the DSC, 9, extronar Sh co 1.						
	a Chann	et the force o grands admites	to the case and of the flexible can equal turbles				

- a Connect the torque wrench adapter to the cost end of the flexible can equind highlen the hexagon socket-herd screws. Attach the torque wrench to the adapter.
- b. On the track RF control power supply operate and bod the r long CFNCY TUNF switch. See the FIGEQUENCY DECKEASE, INCREASE switch to INCREASE a citien to DECREASE.

The torque wrench indication is within the limits of 1.5 and 3 inch pounds.

- (1) Remove the flexible cable from the tuning drive motor Remove the three fillister-head screws and the cover on the magnetion tuning drive motor. Remove the magnetron tuning drive motor.
- (2) With two 1/2-inch open-end wrenches (plotting arm adjusting wrench or equivalent), loosen the top jam nut and lighten the bottom jam nut to increase the torque, or loosen the bottom jam nut to decrease the torque.
- (3) Install the magnetron tuning drive motor, and connect the flexible cable
- (4) Repeat a and b above
- (6) When the torque is within the limits specified, tighten the top jam nut, remove the flexible cable from the motor, and mstall the cover. Secure the cover with the three fillisterhead screws.

Operation

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(U. Table 8-1 Special Magnetron Tuning Drive Torque Check-TTR and MTR-Continued

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2.	Continued (6) Connect the flexible cable the magnetron tuning driv					
	c. Disconnect the torque wrench and the adapter d. Set the FREQUENCY DECREASE INCREASE switch to INCREASE or DECREASE, and operate the FREQUENCY TUNE switch until the relative magnetron frequency dial on the magnetron indicates the same as the relative frequency dial on the magnetron tuning drive. e. Connect the flexible cable to the magnetron.					
		(U) Table 6-2 Special RSPU Pow UNCLASS				

	1				
3	Porform	the	RSPII	Tanwer	checks.

a. Perform the daily power check procedures in table 2-1.

Nurmal indication

- b On the TTR conso.e:
 - 1) Set the range MAN ACQUIRE AID-TRACK AID AUTO switch to MAN
 - (2) Set the azimuth MAN AID-AUTO switch to MAN
 - (3) Set the elevation MAN-AID AUTO switch to MAN
- c On the MTR console
 - (1, Set the TEST switch to the TEST position
 - (2) Set the DISABLE switch to the down position
- d. On the TTR RSPU front panel, set the MODE switch to OPR
- e On the MTR RSPU front panel, set the MODE switch to OPR
- f. Check the voltages on the front pane; of the RSPU

Note Power supposes 1, 2, 3, and 4 referenced in 0 through (8) below are located on a slide in the top of the radar power supply group.

(1) Set the DC SELECT switch to 40V

Meter reading = $+40 \pm 2$ volts.

Adjust power supply 4.

leatined the introded dire

(2) Set the DC SELECT switch to 28V

Meter reading = $\pm 28 \pm 1.4$ volts.

See table 2-1, step 7a (12) for MTR

*For the TTR, move the secondary tap on transformer T3 in the +270V, -28V, +75V or +175V power supply located in the front center of the radar

(U, Table 8-2. Special RSPU Power Checks-TTR and MTR-Continued

Step	Operation	Normal nagarion	orrective procedure
1.	Continue	d	
			power supply group. (Higher tap numbers produce increased voltages.)
			Refer to figure 58
	(3) Set	the DC SELECT switch to 15V	
		Meter reading = +16 ±0.75 volts.	Adjust power supply 3.
	(4) Set	the DC SELECT switch to 12V	
		Meter reading = $\pm 12 \pm 0.8$ volta.	
			Adjust power supply 1
	(5) Set	the DC SELECT switch to +150V/3.	
		Meter reading = $+50 \pm 2.5$ volts.	
			Refer to figure 27 (MTR) or 58 (TTR).
	(6) Set	the DC SELECT switch to +26V	
		Meter reading = $\pm 26 \pm 1.3$ volts.	
			Adjust power supply 2.
	(7) Set	the DC SELECT switch to + 15V	
		Meter reading $= +15 \pm 0.75$ volts.	
			Adjust power supply 3. Repeat (3) and (7) above.
	(8) Set	the DC SELECT switch to +12V	
		Meter reading = $\pm 1.2 \pm 0.6$ volts.	
			Adjust power supply 1
	(9) Set	the DC SELECT switch to +5V	
		Meter reading = $\pm 5 \pm 0.25$ volts.	D 6 41
			Perform the procedures in table 5-9.
	(10) Set	the DC SELECT switch to -5V	
		Meter reading = -5 ± 0.25 volts.	
			Ferform the procedures in table 5-9

(U) Table 5-3 Special RSPU Tests TTR

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No p	Operation	Horpical indications	Cosymbre procedure
1.	Perform th	ne procedures in table 2-1.	
2.	Perform th	ne TTR RSPU front panel checks.	
ı	z. On the T	TR console	
	(1) Set t	he azimuth MAN—AID—AUTO swi	tch to MAN
	(2) Set 1	the elevation MAN—AID—AUTO sw	atch to MAN
	(3) Set (the range MAN ACQUIRE AID T	RACK AID-AUTO switch to MAN
	(4) Set (the TTR PULSE WIDTH switch to SI	łoke –
		the TRR PULSE WIDTH switch to SF	IORT
	(6) Set (the MULTI BIN switch to OFF	
		the TEST switch to TEST	
	(0) 000	the AGC MANUAL switch to AGC	
		the AGC LIN-LOG switch to AGC	
		he RANGE TRACK switch to TTR	
		TR RSPU front panel:	
	L-,	the MODE switch to OPR	I a la collection and the confidence of the confidence of
	it is a new uni	t, record the old unit calibration as a starting	
		the AZIMUTH BORESIGHT thumbw	
	(3) Dep	ress the AZIMUTH BORESIGHT EN	
		COORD DISPLAY is equal settings.	to the AZIMUTH BORESIGHT thumbwhee
		the ELEVATION BORESIGHT thum	
	ι5 Dep	ress the ELEVATION BORESIGHT I	
		COORD DISPLAY is equal wheel settings.	I to the ELEVATION BORESIGHT thumb
	l		Refer to table 6-4
	(6) Set	the SHORT PULSE DELAY thumbwi	heel switches to 0
	(7) Dep	ress the SHORT PULSE DELAY EN	•
		COORD DISPLAY is equal settings.	to the SHORT PULSE DELAY thumbwhee
			Refer to table 6-4
	(8 Set	the LONG PULSE DELAY thumbwh	eel switches to 0.
	(9) Dep	resa the LONG PULSE DELAY ENT	ER pushbutton
		COORD DISPLAY is equal settings.	to the LONG PULSE DELAY thumbwhee
			Refer to table 6-4
	(10) Set	the COORD SELECT switch to A-FC	N
		COORD DISPLAY is equal console.	to the azimuth display on the radar contro

Refer to table 6-4

(U) Table 6-3 Special RSPU Tests TTR-Continued

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Stap	Орегилил	Normai indication	Corrective procedure						
2.	Continued								
	(11) Set t	(11) Set the COORD SELECT switch to E-FCN							
	,,	COORD DISPLAY is equal to	the elevation display on the radar control						
			Refer to table 6-4.						
	(12) Set t	he COORD SELECT switch to D-FCN							
		COORD DISPLAY is equal console.	to the range display on the radar control						
			Refer to table 6-4.						
	Note Set th	e computer condition switch on the computer c	ontrol and status panel to ACTION						
	c. On the T	TR radar control console:							
	(1) Posi	tion the range gate to 100,000 yards.							
	(2) Post	tion the azimuth coordinate to 800 mile	k l						
	(3) Posi	tion the elevation coordinate to 800 mi	δ.						
	d On the T	TR RSPU front panel							
	(1) Set	the COORD SELECT switch to R-FCN							
		COORD DISPLAY equals 70							
			Refer to table 6-4						
	(2) Set	the COORD SELECT switch to H-FCN							
		COORD DISPLAY equals 21							
			Refer to table 6-4						
	(3) Set	the COORD SELECT switch to X-FCN							
		COORD DISPLAY equals 50							
			Refer to table 6-4.						
	(4) Set	the COORD SELECT switch to Y-FCN							
		COORD DISPLAY equals 50							
			Refer to table 6-4						
	LO	NG PULSE DELAY switches to the rea							
	long	pulse delay to 4700.	levation boresights to zero. set short pulse dalay to 4300 and						
3.	Perform t	he TTR high voltage amphiler che	cke-						
	a. On the ?	TTR RSPU front panel							
	(1) Set	the MODE switch to MNL.							

(2) Set the MICROPROCESSOR SELECT switch to PCS.

(U) Table 6-3. Special RSPU Tests-TTR Continued

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_			
Sten	Operation	Normal indication	Currentum procedure
3.	Continued		

(3) Set the DATA toggle switches to benadecimal 00

7 DOWN 3 DOWN 6 DOWN 2 DOWN 1 DOWN 4 DOWN 9 DOWN

- (4) Set the TEST ADDRESS thumbwheel switches to A002.
- (5) Depress the WRITE DATA pushbutton.
- b. Perform the continuity checks using a multimeter
 - (1 Set the multimeter scale to 10 vdc
 - (2) Measure and record the voltage between TP5 of high voltage amplifier board A16 and ground as reading 1.
 - (3) Measure and record the voltage between TP9 of analog 1 O board A14 and ground as reading 2.

Voltage readings I and 2 are equal-

Check the chassis wiring.

- 4 On the RSPU front panel, simulate a range of 204,000 yurds.
 - (a) Set the DATA toggle switches to hexadecimal 3B

7 DOWN 3 UP 6 DOWN 2 DOWN 5 UP 1 UP 4 UP 0 UP

- (b) Set the TEST ADDRESS thumbwheel switches to A402
- (c) Depress the WRITE DATA pushbutton.
- (d, Set the DATA toggle switches to hexadecimal 0E.

7 DOWN 3 UP 6 DOWN 2 UP 6 DOWN 1 UP 4 DOWN 0 DOWN

- (e) Set the TEST ADDRESS thumbwheel swatches to A403
- (f) Depress the WRITE DATA pushbutton.
- (5) Set the multimeter range to 150 vdc.
- (6) Measure the voltage between TP1 of high voltage amplifier board A16 and chassis ground The voltage is between 120 and 130 volts.

Adjust variable resistor R1 on

A16

Refer to figure 54.4

(U) Table 6-3 Special RSPU Tests-TTR-Continued

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irqu	Operation Similar of	ar kiin	arrective princedure
	Continued		
	(7) On the RSPU from	it panel simulate i rang	e of 4 000 yards.
- 1	(a) Set the DATA	toggle switches to hexade	ecimal 47
	7 DOW	N 3 DOWN	
	6 UP	2 UP	
	5 DOW	N 1 UP	
	4 DOW	N OUP	
	(b) Set the ThST	ADDRESS thambwheel	switches to A402

- (c) Depress the WRITE DATA pushbutton
- (d) Set the DATA toggle switches to hexadecimal 00

7 DOWN	3	DOM	f IN	
6 DOWN	2	₽0Œ	/N	
5 DOWN	1	DOW	N	
4 DOWN	0	DOW	ľN	
			-	

- e, Set the TEST ADDRESS thumbwheel switches to A403.
- (f) Depress the WRITE DATA pushbutton
- (g) Set the multimeter range to 50 vdc
- $\hbar_{\!\scriptscriptstyle J}$ Measure the voltage between TPI of high voltage amplifier board Al6 and chassis ground

The voltage is between 20 and 30 volts.

Adjust variable resistor R1 on A16, and repeat the 204,000-yard check in (4) above

4. Perform the TTR analog conditioner AGC board A24 checks.

- a. On the TTR console, verify that the panel switches are set in accordance with step 2a above
- b. On the TTR RSPU front panel.
 - (1) Verify that the MODE switch is set to OPR
 - (2) Set the COORD SELECT thumbwheel switches to D-FCN
- c On the TTR conso e insure that the range readout has zero range drift. Adjust the range handwheel BAL control if necessary.
- d. Check the ratio of the range change per handwheel turn in the short pulse mode
 - 1) On the TTR RSPU front panel set the MODE switch to MNL and back to OPR to reset range Record the reading on COORD DISPLAY
 - (2) On the TTR console rotate the range handwheel clockwise 10 turns. Record the reading on COORD DISPLAY

The final reading minus the initial reading divided by 10 equals 175 \pm 30 (175 \pm 30 yards/turn).

(U) Table 6-3. Special RSPU Tests. TTR. Continued

Yarp	Operation Nurmal indication	Corrective procedure			
4.	Continued				
		Adjust variable resistor R3 or			
		A24. Repeat the procedures in (1,			
		and (2) above. If R3 adjustment does not provide correct			
		.nd.cet.ons:			
		(a) Rotate R3 counterclockwise 20 turns.			
		(b) Rotate R3 clockwise 10 turns.			
		(c, Adjust variable resistor Ri slowly counterclockwise if mittal reading was high, or clockwise if initial reading was low until a result of 175 ±30 yards is obtained			
		(d) Adjust variable resistor R3 until an acceptable value 18 obtained.			
		Refer to figure 54.4			
	e. Check the ratio of the range change per handwheel turn in the long pulse mode				
	(1 On the TTR console set TTR PULSE WIDTH switch to LONG				
	(2) On the TTR RSPU front panel, set the MODE switch to MNL and back to OPR to reset range				
	Record the reading on COORD DISPLAY (3) On the TTR console, rotate the range handwheel clockwise 10 turns. Record the reading on				
	(3) On the TTR console, rotate the range is COORD DISPLAY	nandwheel clockwise 10 turns. Record the reading on			
	The final reading minus (750 + 50 yards/turn).	the initial reading divided by 10 equals 750 ±50			
		Set the TTR PULSE WIDTH			
		switch to SHORT and repeat of			
		and e above for the best compro- mise readings.			
5.	Perform the TTR error-range exchange	board A5 checks.			
	On the TTR RSPU front panel:				
	a Set the MODE switch to MNL.				
	b Set the MICROPROCESSOR SELECT sw	itch to RTS.			
	c. Check the range analog voltage				
	(1) Set the DATA toggle switches to hexade	ecimal 00.			
	7 DOWN 3 DOWN				
	6 DOWN 2 DOWN				
	10000				
	5 DOWN 1 DOWN				
	1 1111				

U: Table 5-3 Special RSPU Tests-TTR Continued

Step	Ipera: in	Normal indica i in		arigr - desails		
5.	Continued					
	(3) Depres	ss the WRITE DA	TA pushbutton			
	4 Set the	e multimeter rang	ge to 10 vdc. Measure the v	collage between TP15 on A5 and ground		
			e equals 0 volts.			
				Adjust variable resistor R3 or A5		
				Refer to figure 54.3		
	(5) Set th	ie DATA toggle sv	vitches to hexadecimal 7F	,		
		7 DOWN	3 UP			
		6 UP	2 UP			
		5 UP	1 UP			
		4 UP	0 UP			
			ige to at least = 25 vdc			
	(7) Depre	ess the WRITE D	ATA pushbutton			
	(8) Measure the voltage between TP15 on A5 and ground					
		The voltage	e equals -10 ± 0.2 volta	9.		
				Adjust variable resistor R4 or A5 Repeat the procedures in (1, through (8) above.		
- 1				Refer to figure 54.3		
	(9) Set th	e DATA toggle sv	vitches to hexadecimal 81			
		7 UP	3 DOWN			
		6 DOWN	2 DOWN			
		5 DOWN	1 DOWN			
		4 DOWN	OUP			
- 1	(IO) Set the	e multimeter ran;	ge to at least +25 vdc			
	(11) Depres	ss the WRITE DA	TA pushbutton.			
		The voltage	at TP15 on A5 equals	+10 ±0.2 volts.		
		The voltage	at TP3 on A24 equals	+10 ±0.2 volts.		
				Refer to figure 54.4.		
6.	Perform TT	R—PCS Test N	0.1 (Canned Data).			
	a On the TT	R console, set the	TTR PULSE WIDTH swi	tch to SHORT		
		R RSPH front per				

- b On the TTR RSPU front panel:
 - 1 Set the MICROPROCESSOR SELECT switch to PCS.
 - (2) Set the MODE switch to TEST
 - 43 Insure that the ELEVATION BORESIGHT reading is recorded and then set the switches to zero. Depress the ELEVATION BORESIGHT ENTER pushbutton.
 - (4) Insure that the AZIMUTH BORESIGHT reading is recorded and then set the switches to zero. Depress the AZIMUTH BORESIGHT ENTER pushbutton

(U. Table 6-3. Special RSPU Tests-TTR-Continued

Step	ageristica	Numer indication	Cartestive procedure				
6.	Continued						
	Dept	(5) Insure that the LONG PULSE DELAY reading is recorded and then set the switches to zero. Depress the LONG PULSE DELAY ENTER pushbutton					
	6 Insure that the SHORT PULSE DELAY reading is recorded and then set the switches to zero. Depress the SHORT PULSE DELAY ENTER pushbutton						
	(7) Set I	the TEST VIDEO switch to the on (up) position.					
	.8) Set (the TEST ADDRESS thumbwheel switches to 0001.					
	c On the T						
		erve the range indicator					
	(2.000)	Test video is displayed.					
		•	Refer to figures 51 and 54.6				
	2 Rote MA	ite the range handwheel to position the range gate of N ACQUIRE AID TRACK AID—AUTO switch	ver the test video, then set the rang to AUTO				
	d. On the T	TR RSPU front panel.					
		ress the TEST INITIATE pushbutton					
	10, 5.5	The LSB decimal point is on (test in pro-	gress).				
	21 Set.	the COORD SELECT thumbwheel switches to A-FC					
		COORD DISPLAY equals 128000 ±100.					
		•	Refer to table 6-4				
	(3. Set	the COORD SELECT thumbwheel switches to E-FC	ON				
	(0 24)	COORD DISPLAY equals 128000 ±100.					
			Refer to table 6-4				
	Note 1	The decimal point is inoperative during a canned data test					
		the COORD SELECT thumbwheel sw tches to D-FG	CN				
	147 200	COORD DISPLAY equals 31835 ± 100.					
			Refer to table 6-4				
	(5) Set	the COORD SELECT thumbwheel switches to R-Fe	CN				
	(6, 00)	COORD DISPLAY equals 9837 ±100.					
		CONTROL DENT DE LA DELLE DE LA CONTROL DE LA	Refer to table 6-4				
	(A) Sat	the COORD SELECT thumbwhee, switches to H-F	YCN.				
	(0) Set	COORD DISPLAY equals 90831 ± 300.					
		COOKS DIST LAT equals 50003 2 000.	Refer to table 6-4.				
	/83 G-1	the COORD SELECT thumbwheel switches to X-F					
	(7) Set		0211				
		COORD DISPLAY equals 9356 ± 100.	Refer to table 6-4.				
	40.0	a coopp on rotal about the Alexander	***************************************				
	(8) Set	the COORD SELECT thumbwheel switches to Y-F	O.N				
		COORD DISPLAY equals 3040 ±100.	Refer to table 6-4				
	1		Reigi to table o-a				

(U) Table 5-3. Special RSPU Tests. TTR. Continued

kop ['трелиция	Normal adicesses 1	unsective procedure
6.	Continued		
	e On the T	FR console	
	1 Set tl	he TTR PULSE WIDTH switch to LONG Observe the	range indicator
		Test video is displayed.	
			Refer to figures 51 and 54.6
	(2) Rota the r	te the range handwhee, to posit on the range gate over ange MAN—ACQUIRE AID—TRACK AID—AUTO	r the test video, then verify that switch is set to AUTO.
- 1	£	TR RSPU front panel	
- 1	(1) Set ti	he COORD SELECT thumbwheel switches to A-FCN	
		COORD DISPLAY equals 12800 ±100.	
			Refer to table 6-4.
	(2) Set t	he COORD SELECT thumbwheel switches to E-FCN	
		COORD DISPLAY equals 128000 ± 100.	
			Refer to table 6-4
	(3) Set t	he COORD SELECT thumbwheel switches to D-FCN	
		COORD DISPLAY equals 32290 ±100.	
		•	Refer to table 6-4
	(4) Set t	he COORD SELECT thumbwheel switches to R-FCN	
		COORD DISPLAY equals 9978 ±100.	
		OU CALL MADE MADE AND THE COLUMN TO THE CALL OF THE CA	Refer to table 6-4
	(5) Set t	he COORD SELECT thumbwheel switches to H-FCN	
	(c) Lice o	COORD DISPLAY equals 92133 ± 300	
		COOLD DICI IMI CHAMS DEIDO 2000.	Refer to table 6-4.
	(B) Set 4	he COORD SELECT thumbwheel swatches to X-FCN	IKIDI W MDICO I
١.	(0) Set (COORD DISPLAY equals 9489 ±100.	
		COOKD DISPLAN equals 8468 2100.	Refer to table 6-4.
i	(F) O-14	he COORD SELECT thumbwheel switches to Y-FCN	helet to lable 0-4.
	(7) Sett	COORD DISPLAY equals 3082 ± 100.	
		COOKD DISPLAT equals 2002 ±100.	But had a did
	700 C	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Refer to table 6-4
	,	the MODE switch to MNL and then to OPR.	
7		ibrated offsets in the thumbwheel switches.	
		LEVATION BORESIGHT thumbwhee, switches to the ove. Depress the ELEVATION BORESIGHT ENTER p	
		COORD DISPLAY indicates the calibrate settings.	ed value on the thumbwheel
			Refer to table 6-4.
		ZIMUTH BORESIGHT thumbwheel switches to the over Depress the AZIMUTH BORESIGHT ENTER pus	

(U) Table 6-3 Special RSPU Tests-TTR Continued

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Yes	lperuti n	Sopra sa a on	c 555.934
7.	Continued		
		COORD DISPLAY indica settings.	tes the calibrated value on the thumbwheel
			Refer to table 6-4
	e Set the Si	HORT PULSE DELAY thumbwhe ve Depress the SHORI PULSE DE	e, switches to the cal brateo offset recorded in step JLAY ENTER pushbutton
	20.2	COORD DISPLAY indica settings.	tes the calibrated value on the thumbwheel
			Refer to table 6-4
,	d Set the L	ONG PULSE DELAY thumbwhee we Depress the LONG PULSE DE	I switches to the cal brated offset recorded in step LAY ENTER pushbuilten
	20 1 400	COORD DISPLAY indice settings.	tes the calibrated value on the thumbwheel
		2064-	Refer to table 6-4
	e. Set the T	EST VIDEO switch to OFF	
		inge MAN ACQUIRE AID-TRA	ACK AID AUTO switch to MAN

(I) Table 6-4. Special RSPU Trouble Analysis Check-TTR and MTR

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tep	Operation.	Marrowal Endlications	Cacrectavy procedure				
	Note The I	Note The RSPL power checks in table 6-2 should be performed prior to the trouble and yets checks					
L.		he PCS CHSUM ROM test.					
	Note In the or MTR RSPI	e operate mode . Fithe FAULT LED most sig of the Balanking proceed with additional testu	radicant decimal point in COORD DISPLAY on the TTR RSPC ag				
		'R/MTR RSPU front panel' MODE switch to TEST					
		b. Set the MICROPROCESSOR SELECT switch to PCS					
		TEST ADDRESS thumbwheel switcer right of the panel.	hes to 6082. Observe bit D0 in the word displayed in				
		Bit D0 is extinguished.					
			Set the TEST ADDRESS thumb- wheel switches to 6147 Observe bits D0 through D7 in the word displayed in the upper right of the panel If any single bit is illuminated, replace PCS MEM board A11. If all bits are illumi-				

2. Perform the CCS CHSUM ROM test TTR only.

 $\alpha.$ Set the MICROPROCESSOR SELECT switch to CCS.

nated, replace PCS CPU board

A10.

U) Table 6.4 Special RSPU Troubte Analysis Check- TTR and MTR- Continued

epr	Operation	Normal indication	ofa x - se fibi(colyte		
	Continued				
		CST ADDRESS thambwheel swatches to the upper right of the panel All bits are extinguished.	to 6±01. Observe bits D0 through D7 in the wor		
		All bits are extinguished.			
			If any single bit is illuminate replace CCS MEM board A37, all bits are illuminated, replai CCS CPU board A36.		
.	Perform th	e RTS CHSUM ROM test.			
	a Set the M	ICROPROCESSOR SELECT switch to	RTS.		
		in the upper right of the panel	to 6000. Observe bits D0 through D7 in the wor		
		All bits are extinguished.			
			If any single bit is illuminated replace RTS MEM beard A? all bits are illuminated, replac RTS CPU board A6.		
.	Perform the AES CHSUM ROM test.				
	a. Set the M	ICROPROCESSOR SELECT switch to	AES.		
		ın the upper right of the panel	to 602A. Observe bits D0 through D7 in the wor		
		All bits are extinguished.			
			If any single bit is illuminate replace AES MEM board A3, all bits are illuminated, replac AES CPU poard A2.		
.	Perform th	e peripheral interface tests.			
•		ICROPROCESSOR SELECT switch to	pric		
			to 6083. Observe bits D1. D2, and D3 of the wor		
		in the upper right of the panel			
		Bit D1 is extinguished (TTR o	nly; disregard bit DI for MTR).		
			Replace CCS peripheral inte face board A35.		
		Bit D2 is extinguished.			
			Replace RTS peripheral interfa- board A9.		
		Bit D3 is extinguished.			
			Replace AES peripheral inte face board A4.		

(Table 6 4 Special RSPI Trouble And Sischeck TTh and MTR Continued

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Blerja	Operation Karpen technology	Corrective procedure			
6.	Perform the tuning and control test.				
,	On the TTR and MTR RSFL front panels s Observe bit D0 of the word displayed in the	set the TEST ADDRESS thumbwheel switches to 60s5 upper right of the pane			
	Bit D0 is extinguished.				
		Replace timing and control board Al 2			
7.	Perform the BCT fault isolation and co				
	 a. Observe the word displayed in the apper Bit D3 is extinguished. 				
		Perform the weekly data lin check in table 2-6 of TM 9-1430-1251-12-1.			
	Bit D6 is illuminated.				
		Proceed to step 8 below.			
	b. On the TTR and MTR RSPU front panel	s.			
	1) Set the MICROPROCESSOR SELEC				
	 Set the TEST ADDRESS thumbwhee in the upper right of the panel. 	el switches to 6011. Observe bit D0 of the word displaye			
	Bit D0 is extinguished.				
		Replace AES CPU board A2.			
	c. Observe bit D1				
	Bit D1 is extinguished.				
		Replace AES CPU board A2.			
8.	Perform the RTS fault isolation and co	orrection procedures.			
	On the TTR and MTR RSPU front panels:				
	a Set the MICROPROCESSOR SELECT				
	 b. Set the TEST ADDRESS thumbwheel s the upper right of the panel. 	switches to 6085. Observe bit D7 of the word displayed			
	Bit D7 is extinguished				
		Proceed to step 9 below			
	c Proceed to step 10 below.				
9.	Perform the PCS fault isolation and c	orrection procedures.			
	On the TTR and MTR RSPU front panels.				
	a. Set the MICROPROCESSOR SELECT:				
	the upper right of the panel	switches to 8C1A Observe bit D3 of the word displayed			
	Bit D3 is extinguished	L.			

Bit D3 is extinguished

Replace PCS MEM board All or PCS CPU board Al0.

(U) Table 6-4 Special RSPU Trauble Analysis Check-TTR and MTR - Continued

Blurp	Ортина	Nermal indication	Competitio processor
0.	Perform th	e AES peripheral interface fault is	olation and correction procedures.
	On the TTR	and MTR RSPU front panels:	
	a. Set the M	IICROPROCESSOR SELECT switch to	AES
		EST ADDRESS thumbwheel switches to right of the paner	6 8818. Observe art 26 of the word displayed
		Bit D6 is extinguished.	
			Replace AES peripheral inte face board A4
n.	Perform th	e CCS fault isolation and correctio	n procedures.
	a. On the T	TR RSPU trent panes.	
	1) Set th	e MICROPROCESSOR SELECT switch	to CCS
		e TEST ADDRESS thumbwheel switch upper right of the panel	es to BLz. Observe out D2 of the word display
		Bit D2 is extinguished.	
			Energize the computer in t
			director station.
		TR RSPU front pane, set the TEST AD the word displayed in the upper right of Bit D2 is extinguished.	DRESS thumbwheel switches \$4.15 Obser the panel
		DIV DE IN CAUTIE WIGHTON	Energize the MTR.
	a Observe	oit D3 of the word displayed in the upper	17
	C 0000171	Bit D3 is extinguished.	Burner in barner
			Perform the BCT fault isolati tests and correction procedure Refer to table 2-6 in T
			9-,430-1251-12-1
	d On the T	TR RSPU front panel:	
		e MICROPROCESSOR SELECT switch	to PCS.
		e TEST ADDRESS thumbwheel switch upper right of the panel.	es to 9018 Observe bit D4 of the word display
		Bit D4 is extinguished.	
			Replace CCS MULTR board A
	e. On the T	TR RSPU front panel.	
	(1) Set th	e MICROPROCESSOR SELECT switch	n to CCS.
		ne TEST ADDRESS thumbwheel switch supper right of the panel	es to 9C01. Observe bit D4 of the word display
		Bit D4 is illuminated.	
			In the director station, verify th
			power is applied to the comput

(U) Table 6-4. Special RSPU Troubia Analysis Check-TTR and MTR. Continued

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	Operation Syrma indication Lorenz ive printer of				
Siep	Operation Symma indication Corrective prints of				
11	Continued				
	f. Observe bit D5 of the word displayed in the upper right of the pane.				
	Bit D5 is illuminated				
	Replace data link interface board AS4				
	g Observe but D6 of the word displayed in the upper right of the panel But D6 is illuminated				
	Repeat step 7 above				
	h Observe bit D7 of the word displayed in the upper right of the panel 85: D7 is illuminated				
	Replace data link interface board A34 and check the data link coaxial cable				
	 On the TTR RSPU front pane, set the TEST ADDRESS thumbwheel switches to 9018 Observe bit D3 of the word displayed in the upper right of the pane. 				
	Bit D3 is extanguished,				
	Repeat step 7 above				
	Observe bit D4 of the word displayed in the upper right of the panel				
	Bit D4 is extinguished				
	Replace CCS MULTR board A38				
	k On the TTR RSPU front panel, set the TEST ADDRESS thumbwhee, switches to 6125 Observe bit D1 of the word displayed in the upper right of the pane.				
1	Bit D1 is extinguished				
	Refer to figure 54 5				
12.	Verify the trouble analysis. On the TTR and MTR RSPU front panels, observe the fault LED				
	The LED is extinguished.				
	Refer problem to higher authority (DSU)				
13.	Establish normal operation. On the TTR and MTR RSPU front panels, set the MODE switch to MNL and then to OPR				

(U) Table 6-5 Special RSPU Manual Tests-TTR and MTR

top	Operation	Normal Indication	Corrective procedure		
.	Perform the opto/thumbwheel test. On the TTR and MTR RSPU front panels				
į.	a. Set the MODE switch to TEST				
b. Set the MICROPROCESSOR SELECT switch to PCS a. Set the TEST ADDRESS thumbwhee, switches to 9000					

'U. Table 8-5 Special RSPU Manual Tests TTR and MTR Continued

			ONCOGNICO				
Stop	Operation	Named indication		Conventive procedure			
1	Continued						
	are displayed	i in the upper r		OR bits 0 through 7 of the first two words ford these as reading 1. Observe the LED as reading 2.			
		Reading 1 a	s equal to reading 2.				
				Replace opto/thumbwheel board A40.			
2.	Perform the r	elay and stati	is test.				
	a. On the TTR	and MTR RSPI	J front panels:				
	(1) Set the TI	EST ADDRESS	thumbwheel switches to A	\$000			
	(2) Set the M	ODE switch to	MNL				
	(3, Set the D	ATA toggle swi	tches to an alternate up do	wn pattern			
		7 UP	3 UP				
		6 DOWN	2 DOWN				
		5 UP	1 UP				
		4 DOWN	0 DOWN				
	(d) Donmon t	he WRITE DAT					
			i A pusioución. S thumbwheel switches to a	1.004			
				4001			
		he WRITE DAT	1				
			Sthumbwheel switches to A	A002			
	(8) Depress t	he WRITE DAT					
		The pattern switches.	on Al3 LED's correspo	nds to the data entered on the toggle			
				Replace relay and status board			
				A13			
	b. On the TTR						
			thumbwheel switches to A				
	(2 Set the D		tches to an alternate down	ap pattern			
		7 DOWN	3 DOWN				
		6 UP	2 UP				
		5 DOWN	1 DOWN				
		4 UP	0 UP				
- 1	(3) Depress t	he WRITE DAT	'A pushbutton				
-	(4 Set the Ti	EST ADDRESS	thumbwhee, switches to A	A001.			
- 1	(5) Depress t	he WRITE DAT	A pushbutton.				
	(6) Set the Ti	EST ADDRESS	thumbwheel switches to A	A002.			
		he WRITE DAT					
		The pattern	_	nds to the data entered on the toggle			
		switches.					

(U. Table 5-5 Special RSPU Manual Tests TTR and MTR - Continued

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Step	Operation	Normal indication	Correct on provintate
2.	Continued		Replace relay and status board
			A13

- c. On the TTR and MTR RSPU front panels
 - (1 Set the TEST ADDRESS thumbwhee, switches to A000.
 - (2) Set the DATA toggle switches to the up position

7 UP 3 UP 6 UP 2 UP 5 UP 1 UP 4 UP 6 UP

- (3) Depress the WRFTE DATA pushbutton
- (4) Set the TEST ADDRESS thumbwheel switches to A001.
- (5) Depress the WRITE DATA pushbutton
- (6) Set the TEST ADDRESS thumbwheel switches to A002.
- (7) Depress the WRITE DATA pushbutton.

The pattern on A13 LED's corresponds to the data entered on the toggle switches.

Replace relay and status board

- d. On the TTR and MTR RSPU front panels
 - (1) Set the TEST ADDRESS thumbwheel switches to A000.
 - (2) Set the DATA toggle switches to the down position.

7 DOWN 3 DOWN 6 DOWN 2 DOWN 5 DOWN 1 DOWN 4 DOWN 0 DOWN

- (3) Depress the WRITE DATA pushbutton
- (4) Set the TEST ADDRESS thumbwheel switches to A001.
- (5) Depress the WRITE DATA pushbutton.
- (6) Set the TEST ADDRESS thumbwheel switches to A002
- (7) Depress the WRITE DATA pushbutton.

The pattern on A13 LED's corresponds to the data entered on the toggle switches.

Replace relay and status board A13

- 3. Perform the analog I/O test.
 - a Correct a dc voltmeter between TP1 (+) and TP6 (ground on analog I/O board A14.
 - b. On the RSPU front panel.
 - (1) Set the TEST ADDRESS thumbwheel switches to A400

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(U. Table 6-5 Special RSPU Manual Testa—TTR and MTR Continued

Step	Operation	Sociatio) indication		uther re bincedate		
3.	Continued					
1	(2) Set the DATA toggle switches to hexadecimal 00.					
		7 DOWN	8 DOWN			
		6 DOWN	2 DOWN			
		5 DOWN	1 DOWN			
		4 DOWN	0 DOWN			
	(3) Dept	rese the WRITE DA	ATA pushbutton			
			SS thumbwheel switches to A401			
	,5) Depr	esa the WRITE DA	ATA pushbutton			
		The voltme	ter Indicates 0 volts.			
				On analog I/O board A14, adju		
				variable resistor R2.		
	(6) Set t	he TEST ADDRES	SS thumbwheel switches to A400			
	(7) Set t	he DATA toggle sw	ntches to hexadecimal FF			
		7 UP	3 UP			
		6 UP	2 UP			
		5 UP	1 UP			
		4 UP	0 UP			
		esa the WRITE DA	E			
			SS thumbwheel switches to A401.			
	(10) Set t		ritches to hexadecimal 07			
ĺ		7 DOWN	3 DOWN			
		6 DOWN	2 UP			
		5 DOWN	1 UP			
		4 DOWN	0 UP			
- 1	(11) Depn	ess the WRITE DA				
- 1		The voltme	ter indicates + 5 volts.			
				On analog I/O board A14, adju variable resistor R1		
	LEAN PLU II	milett a persion	100 1 1 1 1 1 100	variable resistor KI		
			S thumbwheel switches to A400			
	(13) Set t		atches to hexadecimal 00.			
		7 DOWN	3 DOWN			
		6 DOWN	2 DOWN			
		5 DOWN	1 DOWN			
	an D	4 DOWN	0 DOWN			
	(14) Depr	ess the WRITE DA	VIA pushbutton. SS thumbwheel switches to A401.			

(U) Table 6-5. Special RSPL Manual Tests - TTR and MTR -- Continued

Operation	Surrant indication		Carriesant precedum
Continued			
(16) Set L	e DATA toggle sw	ritches to hexadecimal 08	
	7 DOWN	3 UP	
	6 DOWN	2 DOWN	
	5 DOWN	1 DOWN	
	4 DOWN	0 DOWN	
(17) Depri	ess the WRITE DA	ATA pushbutton	
	The voltme	ter indicates ~5 volts.	
			Replace the analog I/O board.
c. Connect t	he voltmeter betw	een TP9 (+) and TP6 (ground).	
d On the Ra	SPU front panel.		
(1) Set th	ne TEST ADDRES	SS thumbwhee, switches to A402.	
(2) Set £	he DATA toggle sy	vitches to hexadecima. 00.	
	7 DOWN	3 DOWN	
	6 DOWN	2 DOWN	
	5 DOWN	1 DOWN	
	4 DOWN	0 DOWN	
(3) Depr	ess the WRITE Da	ATA pushbutton.	
(4) Set ti	he TEST ADDRES	SS thumbwheel switches to A403.	
(5) Depr	ess the WRITE Da	ATA pushbutton.	
	The voltme	ter indicates 0 volts.	
			On analog I/O board A14, adju
			variable resistor R11
		SS thumbwheel switches to A402.	
(7) Set £		niches to hexadecimal FF	
	7 UP	3 UP	
	6 UP	2 UP	
	5 UP	1 UP	
	4UP	0 UP	
-	ess the WRITE D.	*	
		SS thumbwheel switches to A403.	
(10) Depr	ess the WRITE Da	•	
	The voltme	ter indicates + 10 volts.	
			On analog I/O board A14, adja variable resistor R10.
			Variable resistor reto.

(U. Table 6-5 Special RSPU Manual Tests-TTR and MTR Continued

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Step	Openation	Nerwal indication		Corrective precedure		
3.	Continued					
	f. On the RSPU front panel:					
			S thumbwheel switches to A002.			
	(2) Set t	he DATA toggle sv	ntches to hexadecimal 20			
	(7 DOWN	3 DOWN			
		6 DOWN	2 DOWN			
		5 UP	1 DOWN			
		4 DOWN	0 DOWN			
	(3) Depr	ress the WRITE DA	VTA pushbutton			
			ritches to hexadecimal 00			
		7 DOWN	3 DOWN			
		6 DOWN	2 DOWN			
		5 DOWN	1 DOWN			
		4 DOWN	0 DOWN			
	(5 Sett	he TEST ADDRES	S thumbwheel switches to A400.			
	(6. Dept	rese the WRITE Da	ATA pushbutton			
	(7 Set t	he TEST ADDRES	SS thumbwheel switches to A401			
		reas the WRITE Da				
	(9) Set t	the TEST ADDRES				
	(10) Depr	esa the WRITE DA				
	(11) Set tl	he TEST ADDRES				
	(12. Depr	rese the WRITE DA				
	(13, Set t)	he TEST ADDRES	S thumbwheel awatches to A400			
	(14) Depr	ress and hold the R	EAD DATA pushbutton			
		The LSB of acceptable		adecimal FF or 00. (Blinking is		
				(1) On analog I/O board A14, adjust R7 while depressing the READ DATA push- button		
				(2) Replace the analog I/O board.		
	(15) Set t	he TEST ADDRES	S thumbwheel switches to A401	,		
			EAD DATA pushbutton			
			n the TEST MONITOR is hex	adecimal FF or 00. (Blinking is		
				(1) On analog I O board A14, adjust R7 while depressing the READ DATA push-		

button.

(2) Replace the analog I/O board.

(U, Table 6-5. Special RSPU Manual Tests-TTR and MTR -Continued

			UNCLASSIRED			
Step	Operation	Normai sadscutito		Corrective procedure		
3.	Continued					
	(17) Set the TEST ADDRESS thumbwheel switches to A402.					
	(18 Depr	(18 Depress and hold the READ DATA pushbutton				
	The LSB on the TEST MONITOR is hexadecimal FF or 00. (Blinking is acceptable.)					
				(1) On analog I/O board A14 adjust R6 while depressing the READ DATA push- button		
				(2) Replace the analog I/O board		
	(19) Set ti	he TEST ADDRES	S thumbwheel switches to A403.			
	(20) Depr	(20) Depress and hote the READ DATA pushbutton.				
	The LSB on the TEST MONITOR is hexadecimal FF or 00. (Blinking is acceptable.)					
				(1, On analog LO board A14 adjust R6 while depressing the READ DATA push button		
				(2) Replace the analog I/O board		
	(21) Set the DATA toggle switches to hexadecimal FF					
	1.7.	7 UP	3 UP			
		6 UP	2 UP			
		5 UP	1 UP			
		4 UP	0 UP			
	(22) Set the TEST ADDRESS thumbwheel switches to A400					
	(23) Depress the WRITE DATA pushbutton.					
	(24, Set the DATA toggle switches to hexadecimal 07					
		7 DOWN	3 DOWN			
		6 DOWN	2 UP			
		5 DOWN	i UP			
		4 DOWN	0 UP			
	(25) Set the TEST ADDRESS thumbwheel switches to A401					
	(26, Depress the WRITE DATA pushbutton.					
	(27) Set the DATA toggle switches to hexadecimal FF					
		7 UP	3 UP			
		6 UP	2 UP			
		5 UP	1 UP			

0 UP 28) Set the TEST ADDRESS thumbwheel switches to A402.

4 UP

t Table 6-3 Special RSPL Manual Tests-TTR and MTR-Continued

lte-p	Operation	Normal indications	Connective propedure
3.	Continued		
	(29) Dem	ress the WRITE DATA pushbutton	
		he TEST ADDRESS thumbwheel switches to	A403
		ess the WRITE DATA pushbutton.	
		ne TEST ADDRESS thumbwheel switches to	A400
	(33) Dept	ress and hold the READ DATA pushbutton.	
		The LSB on the TEST MONITOR is	hexadecimal FD, FE, or FF
			 While depressing the REAI DATA pushbutton, adjust variable resistor R8 on the analog I/O board for an indication of FE.
			(2) Replace the analog I/O board
- 1		the TEST ADDRESS thumbwheel switches to	A401
- 1	(35) Dept	ress and hold the READ DATA pushbatton.	
		The LSB on the TEST MONITOR is	
			(1) While depressing the REA DATA pushbutton, adjust variable resistor R8 on the analog I/O board. Repeat (3: through (35) above.
			(2) Replace the analog I/O board
	(36) Set I	the TEST ADDRESS thumbwheel switches to	A402.
- 1		ress and hold the READ DATA pushbutton	
- 1		The LSB on the TEST MONITOR u	s hexadecimal FD, FE, or FF.
			(I) While depressing the REA DATA pushbutton, adju- variable resistor R5 on the analog I/O board for an indi- cation of FE.
			(2) Replace the analog I/O board
	.38) Set 1	the TEST ADDRESS thumbwheel switches to	
	,	ress and hold the READ DATA pushbutton.	
	toor wep	The LSB on the TEST MONITOR i	s hexadecimal 03.
			(1, While depressing the REA DATA pushbutton, adju- variable resistor R5 on the analog I/O board Repest (3 through (39) above

(U) Table 6-5 Speciai RSPL Manual Tests-TTR and MTR Continued

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Step	Operation	Normal Indication	Correction protedum

- Perform the mode control and front panel interface tests.
 - a. On the TTR and MTR RSPU front panels:
 - (1) Set the MODE switch to WNL.
 - (2) Set the MICROPROCESSOR SELECT switch to PCS
 - (3) Set the TEST ADDRESS thumbwheel switches to 8400.
 - 4) Set the DATA toggle switches to hexadecimal 55.

7 DOWN 3 DOWN 6 UP 2 UP 5 DOWN 1 DOWN 4 UP 0 UP

(5) Depress the WRITE DATA pushbuttons.

On the TEST MONITOR, bits illuminate with the hexadecimal address (8400) appearing in the two left hytes and hexadecimal 55 appearing in the right byte.

- If the right byte is not 55, replace mode control board A41.
- (2) If the .eft bytes are not 8400. rep.ace front panel interface board A42.
- b. On the TTR RSPU, set the MODE switch to OPR.
- Perform the high voltage amplifier board test.
 - g. On the TTR console, slew the range to 20,000 yards.
- b. On the B-scope, depress the REFRAME pushbutton

The B-scope displays proper presentation centered at approximately 20,000 yards.

Perform the nonperiodic B-scope indicator checks in table 59, TM 9-1430-1255-12-1. Repeat step 5. If the indication is still abnormal, replace high voltage amplifier board A16.

c. Slew the range to 190,000 yards.

The B-scope display is centered at approximately 190,000 yards.

Perform the nonperiodic B-scope indicator checks in table 59, TM 9-1430-1255-12-1. Repeat step 5. If the indication is still abnormal, replace high voltage amplifier board A16

Corrective procedure

TM 9-1430-1256-12-1

U Table 6-5. Special RSPU Manual Tests-TTR and MTR. Continued

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Normal spirateon

Stap

Operation

6.	Perform the elevation input and display transmitter tests. a. On the MTR and TTR RSPU front panels				
	(1) Set the COORD SELECT thumbwheel switches to E FCN				
	(2) Set the MODE switches to OPR.				
	b. On the radar console, set the elevation MAN AID AUTO switch to AID and rotate the elevation handwheel 2 to 3 turns.				
	COORD DISPLAY tracks the antenna elevation movement smoothly, without jumps.				
	(1) If the readout on the console or COORD DISPLAY does not change smoothly, observe A1 elevation input board LED's and observe the rotating bit pattern (2) If the bit pattern progresses				
	smoothly but the readout is not changing properly, replace A39, if the bit pattern is not smooth, replace A1.				
	(3) If the bit pattern does not pro- gress smoothly, check incom- ing data.				
	(4) Replace display transmitter board A39.				
	Refer to figure 54.4				
	(5) Repeat a and b above after replacing elevation input board A1 or display transmit- ter board A39				
	Refer to figure 54.2				
	c. Sot the elevation MAN-AID-AUTO switch to MAN				
7.	Perform the azimuth input and display transmitter tests.				
	a. On the TTR and MTR RSPU front pane.s, set the COORD SELECT thumbwheel switches to A-FCN				
	b. On the radar console, set the azumuth MAN—AID— AUTO switch to AID and rotate the azimuth handwheel 2 to 3 turns.				
	COORD DISPLAY tracks the azimuth antenna movement smoothly, without jumps.				
	(1) If the readout on the console or COORD DISPLAY does not change smoothly, observe A22 azimuth input board LEDs and observe the rotation of the bit pattern.				
	bit pattern.				

(U) Table 8-5 Special RSPU Manual Tests TTR and MTR - Continued

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Step	tpers out Norma autres off	crietive literalute
7.	Continued	(2 If the bit pattern progresse smooth,) but the readou is not changing properly, re place A39; if the bit pattern i not smooth replace A22.
		(9) If the bit pattern does not pri gress emoothly, check incom ing data
		(4, Replace display transmitte board A39
		Refer to figure 54.4
		(5) Repeat a and b above after replacing azimuth inpuboard A22 or display transmitter board A39
		Refer to figure 54.2
	c. Set the azimuth MAN—AID—AUTO switch to M	IAN
8.	Porform the error-range exchange, video procition decode tests.	cessor, range down-counter, and acquis
	a On the appropriate IF test generator set the OSC a PULSE WIATH switch to SHORE the SLEW R. center (off) position	switch to ON, the MODE switch to PULSE, t' ATE switch to 5, and the SLEW switch to t
	b On the appropriate rador control console set the '	FEST switch to TEST
	c. On the target track control-power supply, set the 'IND switch to R	PTR PULSE WIDTH switch to SHORT and t
	d Verify that the raige MAN-AID-AUTO swit	tch MTR) and the MAN ACQUIRE AID

- d Verify that the ratige MAN—AID—AUTO switch MTR) and the MAN ACQUIRE AID— TRACK AID—AUTO switch (TTR) are set to MAN
- e. Rotate the range handwhee, to center the IF test pulse in the range notch
- f Set the range MAN AID AUTO switch MTR or MAN ACQUIRE AID—TRACK AID AUTO switch (TTR) to AUTO.
- g On the IF test generator, set the SLEW awitch to OUT and then to IN then set to the center of Dosition, and observe the range indicator

The range gate tracks the IF signal continuously.

- Replace error-range exchange board A5 and repeat steps 4 and 5 above.
- (2) Repiace video processor board A25 and repeat steps 4 and 5 above.

(U) Table 6-5. Special RSPL Manual Tests-TTR and MTR. Continued

Step	Operation Normal substitute		Cnewstave procedum			
в.	Continued					
			(3) Replace range-down counter board A27 and repeat steps 4 and 5 above			
			(4) Replace acquisition decode board A29 and repeat steps 4 and 5 above			
	h. On the IF test generator, se	t the OSC switch to OFF				
	t Set the range MAN All AID—AUTO switch (TTR	AUTO switch MTR and the to MAN	MAN ACQUIRE AID TRACK			
9.	Perform the buffer interfa	ce tests for the TTR and MTR	L.			
	c. On the TTR and MTR RSF	c. On the TTR and MTR RSPU front panels				
	(1) Set the MODE switch t					
	(2) Set the TEST ADDRES	S thumbwheel switches to 9400				
	b. Insure that both radors an	in the TEST mode				
	a Set the TTR RSPU MICROPROCESSOR SELECT switch to CCS.					
	d Set the MTR RSPU MICROPROCESSOR SELECT switch to PCS					
	e On the TTR RSPU front panel					
	(1) Set the DATA toggle switches to hexadecimal 00					
	7 DOWN	3 DOWN				
	6 DOWN	2 DOWN				
	5 DOWN	1 DOWN				
	4 DOWN	0 DOWN				
	(2) Depress the WRITE DA	TA pushbution				
	f. On the MTR RSPU front	panel depress the READ DATA	pushbutton. On the TTR and MTR tworad:splayed in the upper right of			
	The words	are identical to the data set a	nanually.			
			Replace buffer interface board A3			
	g On the TTR RSPU front WRITE DATA pushbutton		hes to hexadecima. FF depress the			
	7 UP	3 UP				
	6 UP	2 UP				
	5 UP	1 UP				
	4 UP	o UP				

(U) Table 6-6 Special RSPL Manual Tests-TTR and MTR Continued

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Skep	Operation	Narross tolore and	4 press i e groundiarii
9.	i On the T write I j Perform I . Who. write (2 Ont	TR RSPU front pa DATA pushbutton, a 7 UP 6 DOWN 5 UP 4 DOWN TR RSPU front pi DATA pushbutton, the address interface, continually depresent address from the MTR RSPU from the TEST ADDRE A pushbutton for this 0 through 7 of	3 UP 2 DOWN 1 UP 0 DOWN and, set the DATA toggle switches to hexadecima, 55, depress the
10.	a On the N	MTR RSPU set the	ce tests for the MTR and TTR. DATA togg, e switches to AA and perform the procedures in step 9/ TTR and TTR for MTR. the MTR and TTR RSPU front panels to OPR

(U) Table 8-6. Special RSPU Confidence Check-TTR and MTR

¢;	Operation Storma' and reserve	operative princedules
1.	Perform PCS Test No. 1.	
	a. Perform the procedures in table 2-1	
	b. For the TTR, perform the procedures in table	6-3 , step 2a
	c. For the MTR, perform the procedures in table	6-7, step 2a.
	d. On the TTR and MTR RSPU front panels	
	(1) Set the MODE switch to TEST	
	(2) Set the MICROPROCESSOR SELECT's	witch to PCS.
	(3) Record the BORESIGHT switch settings	
	.4 Set the ELEVATION BORESIGHT thun	abwheel switches to zeros.
	(5) Depress the ELEVATION BORESIGHT	ENTER pushbutton.
	(6) Set the AZIMUTH BORESIGHT thumb	whee, switches to zeros

(U) Table 6-6 Special RSPU Confidence Check TTR and MTR-Continued

Opera ou	Sooms indication	arcence procedure
Conti	nued	
(7)	Deprese the AZIMUTH BOR	ESIGHT ENTER pushbutton
		EACON DELAY thumbwheel switches to zeros and depress the
(9)	Set the SHORT PULSE DL	AY and LONG PULSE DELAY thumbwheel switches to zero
	Depress the SHORT PULS pushbuttons.	E DELAY ENTER and LONG PULSE DELAY ENTE
(11) §	Set the TEST VIDEO toggle s	witch to the up position
12,	Rotate the range handwheel t	o position the range gate over the test video
	Set the range MAN A.D AID-AUTO switch (TTR) to	AUTO switch MTR and MAN ACQUIRE AID TRACAUTO
(14)	Set the TEST ADDRESS thu	mbwhee, switches to 0001
(15)	Depress the TEST INITIATE point on COORD DISPLAY .s	pushbutton and observe that the least significant digit deciment.
(16) (Set the COORD SELECT thu	mowheel switches to D-FCN
	On COORD DISI	PLAY, D = 31835 ± 100.
		Replace RTS CPU board A6 RTS MEM board A7
e Ont		suppry, set the TTR PULSE WIDTH switch to LONG
	On TTR RSPU C	OORD DISPLAY, D = 32290 ± 100.
		Replace RTS CPU board A6 RTS MEM board A7
f On t	he TTR und MTR RSPU froi EN	nt panels, set the COORD SELECT thumbwhee, switches
	COORD DISPLA	Y indicates E = 128000 ±10.
		Replace AES CPU board A2 AES MEM board A3
g On t	he TTR and MTR RSPU (ro) 2N	nt panels, set the COORD SELECT thumbwheel switches
	COORD DISPLA	Y indicates A = 128000 ±10.
		Replace AES CPU board A2 AES MEM board A3.
h. On t H-F0	he TTR RSPU, set the COC IN, X-FCN, Y-FCN and obser	RD SELECT thumbwheer switches in sequence to R-FC ve COORD DISPLAY
	R = 9978 ±100 H = 92133 ±300 X = 9489 ±100 Y = 3082 ±100	
	2 - 5002 - 100	Replace CCS CPU board A36 AES MEM board A3
		supply, set the TTR PULSE WIDTH switch to SHORT

(U) Table 6-6 Special RSPU Confidence Check-TTR and MTR-Continued

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iten	Devention	Numer stribeston.	Convertive procedure				
1	Continued						
	J On the TTR and MTR RSPL front panels set the COORD SELECT (humbwhee, switches in sequence to R FCN H-FCN X FCN N-FCN and observe COORD D.SPLAY						
		R 9837 + 100					
		$H = 90831 \pm 300$					
		X = 9356 ±100					
		$Y = 3040 \pm 100$					
			Replace CCS CPU board A36 or AFS MFM board A3				

A Depress the TEST INITIATE pushbutton.

The least significant digit decimal point extinguishes. (Disregard numerical digits.)

. Set the range MAN AID ALTO switch (MTR and MAN ACQUIRE AID TRACK AID ALTO switch (TTR) to MAN

2. Perform PCS Test No. 2.

On the TTR and MTR RSPU front panels:

- a Set the TEST ADDRESS thumbwheel switches to 0002
- 6 Set the COORD SELECT thumbwheel switches to D-FCN
- c Depress the TEST INITIATE pushbatton.

COORD DISPLAY starts at 20000 and advances 1000 counts second

Replace RIS MULTR board A8.

d. Set the MODE switch to MNL and back to TEST

3. Perform CCS Test No. 4.

On the TTR RSPU front panel:

- a. Set the MICROPROCESSOR SELECT switch to CCS.
- b. Set the TEST ADDRESS thumbwheel switches to 0004
- Observe and record the display on the TEST MONITOR LED's.
- d. Depress the TEST INITIATE pushbutton.
- e. Observe the display on the TEST MONTTOR LED's.

The display is the same as that recorded in c above.

- (1) On the range handwheel drive control, adjust the BAL control to stop any drift.
- (2) Replace data link board A34.

4. Perform AES Test No. 1.

On the TTR and MTR RSPU front panels:

- a Set the MICROPROCESSOR SELECT switch to AES.
- b. Set the TEST ADDRESS thumbwheel switches to 0000
- c. Set the COORD SELECT thumbwheel switches to E-FCN

(U) Table 6-8 Special RSPU Confidence Check-TTR and MTR -Continued

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Operation man whose share Normal indirector Continued d Depress the TEST INITIATE pushbutton On COORD DISPLAY, E = 080000. Replace AES CFU board A2 e. Depress the TEST INITIATE pushbutton The decimal point moves from the extreme right position to any other position. (Disregard numerical digits.) 5. Perform AES Test No. 2. On the TTR and MTR RSPU front panels. a. Set the TEST ADDRESS thumbwhee, switches to 0001 b. Set the DATA toggle switches to hexadec.mal 09 7 DOWN a UP 6 DOWN 2 DOWN 5 DOWN 1 DOWN 0 UP 4 DOWN c. Depress the TEST INITIATE pushbutton COORD DISPLAY starts at 80000 and advances 500 counts second Replace AES CPU board A2 d. Decress the TEST INITIATE pushbutton. The decimal point moves from the extreme right position to any other position. (Disregard numerical digits.) Perform AES Test No. 3. ß. On the TTR and MTR RSPU front panels a Set the TEST ADDRESS thumbwheel switches to 0002. b. Set the COORD SELECT thurs owheel switches to A-FCN c. Set the DATA toggle switches to hexadecimal 00. 7 DOWN 3 DOWN 6 DOWN 2 DOWN 5 DOWN 1 DOWN a nown 0 DOWN d. Depress the TEST INITIATE pushbutton. On COORD DISPLAY, A = 560000. Replace AES CPU board A2.

e Depress the TEST INITIATE pushbutton

U. Table 6.5. Special RSPU Confidence Check. TTR and MTR .- Continued

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Corp.	Qpv. action	Normal indicators		.przeptow procedute		
7.	Perform Al	ES Test No. 4.				
	On the TTR	On the TTR and MTR RSPU front panels.				
	a. Set the TEST ADDRESS thumbwheel switches to 0003					
	b. Set the DATA toggle switches to hexadecimal 09.					
		7 DOWN	3 UP			
		6 DOWN	2 DOWN			
		5 DOWN	1 DOWN			
		4 DOWN	0 UP			

c. Depress the TEST INITIATE pushbutton

COORD DISPLAY starts at 560000 and advances 500 counts second.

Replace AES CFU board A2.

d. Depress the TEST INITIATE pushbutton

8. Recstablish the boresight settings.

Enter the boresight settings recorded in step 1d/3 above on the thumbwheel switches and depress the ENTER pushbutton associated with each switch

9. Restore normal operation.

Set the MODE switch to OPR

(U) Table 5-7 Special RSPU Tests-MTR

		OI.	
Step	Operation	Neymal tridication	Согуевыма рекседите
i.	Perform th	se procedures in table 2-	1.
2.	Perform ti	he MTR RSPU front pan	el checks.
	a. On the m	nasile track control drawer	
	(1 Set t	the azimuth, elevation, and	range MAN AID AUTO switches to MAN
	(2) Set 1	the TEST switch to TEST	
	,3, Set 1	the DISABLE switch to the	down position
	b. On the M	ATR RSPU front panel	
	41 Set t	the MODE switch to OPR.	
		and under test has call brated ve at, record the old unst curioration	are on the thumbwheel switches, record the values for future reference. If it is a starting point
	,2, Set	the AZIMUTH BORESIGH	T thumbwheel switches to 0.
	(3) Dep	ress the AZIMUTH BORES	EIGHT ENTER pushbutton.
		COORD DISPLAY settings.	is equal to the AZIMUTH BORESIGHT thumbwheel
			Refer to table 6-4.
	4) Set	the ELEVATION BORESIC	GHT thumbwheel switches to 0.

		(U) Table 6-7 Special RSPU UNCLAS:	
Step	3peration	Normal indication	cornet an interduce
2.	Continued		
	(5 Dept	ress the ELEVATION BORESIGH	T ENTER pushbutton.
- 1			aal to the ELEVATION BORESIGHT thumb-
			Refer to table 6-4
	(6) Set t	he BEACON DELAY thumbwheel	switches to 0
	(7) Depr	ress the BEACON DELAY ENTER	pushbutton
1		COORD DISPLAY is equipment settings.	qual to the BEACON DELAY thumbwheel
ĺ			Refer to table 6-4.
	(8) Set t	he COORD SELECT thumbwheel	switches to A-FCN
		COORD DISPLAY is equi	al to the azimuth display on the MTR console.
			Refer to table 6-4
	(9 Set t	he COORD SELECT thumbwheel	
		COORD DISPLAY is equa	il to the elevation display on the MTR console.
			Refer to table 6-4.
	(10) Set tl	ne COORD SELECT thumbwheel s	
		COORD DISPLAY is equa	il to the range display on the MTR console.
			Refer to table 6-4
		issile track control drawer	
		ion the range gate to 100,000 yards	
		ion azimuth at 800 mils.	
		ion elevation at 800 mile.	
		TR RSPU front panel:	
	(1) Set ti	te COORD SELECT thumbwheel s	
		COORD DISPLAY equals	70707 ±70.
			Refer to table 6-4
	2) Set tl	te COORD SELECT thumbwheel s	
		COORD DISPLAY equals	212121 ±212.
	701 D		Refer to table 6-4.
	(3) Set th	ne COORD SELECT thumbwheel s	switches to X FCN

COORD DISPLAY equals 50000 ±50.

Refer to table 6-4

(U) Table 6-7 Special RSPU Tests MTR Contabued

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	UIACTYSQUIED				
Susp	Operation	Narmal militation	Committee procedutes		
2.	Continued (4 Set th	ne COORD SELECT thumbwhee, so			
			Refer to table 6-4		
	swite	he AZIMUTH BORESIGHT, EU hes to the readings recorded in step VATION BORESIGHT, and BEACO	FYATION BORESIGHT, and BEACON DELAY 2h 1 above Depress the AZIMUTH BORESIGHT ON DELAY ENTER pushbuttons.		

Note For new absultations, set azimuch and elevation offsets to zero, set beacon detay to 4300

- 3. Perform the continuity checks.
 - a. Set the multimeter scale to 10 vdc
 - b. Measure and record the voltage at TP5 of high voltage amplifier board A16 as reading 1
 - c Measure and record the voltage at TP10 of analog I O board A14 as reading 2

The voltages (readings I and 2) are equal-

Check the chassis wiring

- d Set the multimeter range to 150 vdc
- e Measure the voltage at TP1 of high voltage amplifier board A16.

The voltage indication is between 95 and 105 vdc.

Adjust variable resistor R1 on A16

- 4. Perform the MTR analog conditioner AGC board A24 checks.
 - a On the MTR console, verify that the panel switches are set in accordance with step 2a
 - b On the MTR RSPU front pane, verify that the MODE switch is set to OPR Set the COORD SELECT thumbwheel switches to D-FCN
 - c On the MTR console, insure that the range readout has zero range drift Adjust the range handwheel BAL control if necessary.
 - d. Check the ratio of range change per handwheel turn.
 - On the MTR RSPL front panel, set the MODE switch to MNL and then to OPR to reset range Record the reading on COORD DISPLAY
 - (2) On the MTR console, rotate the handwheel clockwise 10 turns. Record the reading on COORD DISPLAY

The final reading minus initial reading divided by $10 \text{ equals } 175 \pm 25 \text{ } (175 \pm 25 \text{ yards/turn}).$

Adjust variable resistor R3 on A24. Repeat the procedures in (1) and (2) above If R3 adjustment does not provide correct indications.

- far Rotate R3 counterclockwise 20 turns.
- (b) Rotate R3 clockwise 10 turns.

(U) Table 6-7 Special RSPU Tests-MTR -Continued

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Stem	Operation	Normal sudication	Carrective procedure
4	Continued		
,			(c) Adjust variable resistor RI slowly counterclockwise if unitial reading was high, or clockwise if unitial reading was low, until a result of 175 ±25 yards is obtained. (d) Adjust variable resistor R3 until an acceptable value is obtained. Refer to figure 21 4
	e. On the ra	dar control console	
	(1) Set the	MTR TEST switch to the down pos	ition.
	(2) Set th	e MTR DISABLE switch to the down	n position
		a launcher position by depressing an A, Leuncher 4).	a SECTION switch and LAUNCHER switch e.g.,
		nancher position potentiometer rac S potentiometer to 0 yards.	k, adjust the selected LPU designate RANGE—

g. On the MTR RSPU front pane set the COORD SELECT thumbwheel switches to D-FCN

COORD DISPLAY indicates 0 ±16 yards (display changes in 16-yard increments).

> Adjust variable resistor R4 on A24

> > Refer to figure 21.4.

h. Adjust the selected LPU designate RANGE 10 YARDS potentiometer to 10000 yards

COORD DISPLAY on the MTR RSPU front panel indicates 20000 ± 1000 yards.

> Adjust variable resistor R2 on A24

> > Refer to figure 21.4.

Note Repeat g and h above until both readings are within specifications

: Set the TEST switch on the missile track control drawer to TEST

Perform the MTR error-range exchange board A5 checks.

On the MTR RSPU front panel:

- a. Set the MODE switch to MNL.
- b Set the MICROPROCESSOR SELECT switch to RTS.
- c. Check the range analog voltage.

(U) Table 6-7 Special RSPL Tests - MTR—Continued

ևք	Орегания	Normal strätte tota		Carreetave procedure
5.	Continued			
	(1. Set t)	ne DATA toggle sw	ntches to hexadecimal 00.	
	(2) 2300 2	7 DOWN	3 DOWN	
		6 DOWN	2 DOWN	
		5 DOWN	1 DOWN	
		4 DOWN	0 DOWN	
	(9) Set (SS thumbwheel switches to 9004	
		ess the WRITE DA		
		he multimeter ran		
		oure the voltage at		
	(o) Men	The voltage		
		THE VOILING	s bequitate of	Adust variable resistor R3 on
				A5
	(6, Set t)	he DATA toggle sv	vitches to hexadecimal 7F	
		7 DOWN	a UP	
		6 UP	2 UP	
		5 UP	1 UP	
		4 UP	0 UP	
	(7) Set 6		ge to at least -25 vdc	
		ess the WRITE Da	-	
		sure the voltage at	-	
	107 112000	_	e equals -10 ±0.2	
			V dagatata av a vill	Adust variable resistor R4 or
				A5. Repeat the procedures in (5
				through (9) above.
	(10) Set t	he DATA toggle av	vitches to hexadecimal 81	
		7 UP	3 DOWN	
		6 DOWN	2 DOWN	
		5 DOWN	1 DOWN	
		4 DOWN	0 UP	
	(11 Set tl	he multimeter ran	ge to at least + 25 vdc.	
	(12) Depr	ess the WRITE DA	ATA pushbutton.	
		The voltage	e at TP15 on A5 equals +10 ±	0.2.
				Adjust variable resistor R4 or
				A5
		The voltage	e at TP3 on A24 equals +10 ±	
	1			Check the chassis wiring

CONFIDENTIAL (U, Table 6.7 Special RSPU Testa MTR Continued

(U, Table 6.7 Special RSPU Tests: MTR -Continued UNCLASSIFIED

Diservitori	Nurrous indication	Correct is precident
Perform MTR	-PCS Test No. 1 (Canned Data).	
On the MTR	RSPU front panel	
	ICROPROCESSOR SELECT switch to PCS.	
	IODE switch to TEST	
8) Insure th	at the LLEVATION BORESIGHT switch is set to 2 GHT ENTER pushbutton	ero, and depress the ELEVATION
4 Insure th	at the AZIMUTH BORESIGHT switch is set to a	zero, and depress the AZIMUTI
& Insure th	at the BEACON DELAY switch is set to zero, an	nd depress the BEACON DELA
	EST VIDEO switch to the on (up) position.	
(7) Set the T	EST ADDRESS thumbwheel switches to 0001	
b. On the MTR	console observe the range indicator	
	Test video la displayed.	
Using the ra AUTO swite	nge bandwheel, position the runge gate over test vi h to AUTO.	deo Set the range MAN-AID-
o On the MTR	RSPU front pane.	
(1) Depresa t	he TEST INITIATE pushbutton.	
	The LSB decimal point is on (test in progr	reas).
(2) Set the C	OORD SELECT thumbwheel switches to A-FCN	
	COORD DISPLAY equals 128000 ± 100.	
		Refer to table 6-4
(3) Set the C	OORD SELECT thumbwheel switches to E-FCN	
	COORD DISPLAY equals 128000 ±100.	
		Refer to table 6-4
(4) Set the C	OORD SELECT thumbwheel switches to D-FCN	
	COORD DISPLAY equals 31835 ± 100.	
		Refer to table 6-4.
(5) Set the C	OORD SELECT thumbwheel switches to R-FCN	
	COORD DISPLAY equals 9837 ±100.	
		Refer to table 6-4
(6 Set the C	OORD SELECT thumbwheel switches to H-FCN	
	COORD DISPLAY equals 90831 ± 300.	
		Refer to table 6-4
(7) Set the C	OORD SELECT thumbwheel switches to X-FCN	
	COORD DISPLAY equals 9358 ±100.	
		Refer to table 6-4

(U) Table 6-7 Special RSPU Tests-MTR-Continued

UNCLASSIFIED

ст	uperation	Normal indication	Unimed to proteduce
	Continued		
	(8) Set th	s COORD SELECT thumbwheel swi	itches to Y FCN
	(0) 1,000 010	COORD DISPLAY equals	
			Refer to table 6-4
	(9) Set th	e MODE switch to MNL and then to	OPR.
,	Set the cal	brated offsets in the thumbwhe	el switches,
	_ D_4 +b_ T	ELEVATION BORESIGHT thumbw	neel switches to the calibrated offset recorded in ORESIGHT ENTER pushbutton.
	Step ac to	COORD DISPLAY indicat	es the calibrated value on the thumbwheel
		settings.	
			Refer to table 6-4
	b. Set the	AZIMUTH BORESIGHT thumbwh 1 above. Depress the AZIMUTH BO	eel switches to the calibrated offset recorded in RESIGHT ENTER pushbutton
	step 20	COORD DISPLAY indicat	es the calibrated value on the thumbwheel
		Settings.	Refer to table 6-4.
	c Set the	BEACON DELAY thumbwheel swit	ches to the calibrated offset recorded in step 2b (1
	grave. D	COORD DISPLAY indicate settings.	tes the cahbrated value on the thumbwheel
		Betimka	Refer to table 6-4.
	d Set the	TEST VIDEO switch to OFF	

(U) Table 6-8. Specias Antenna Reflector Titl Checks—TTR and MTR

See	Operativa	Nerman redication	Corrective procedule		
		nomize RF interference, ir other common object	usure that the MTR and TTR antennas are not simustaneously simed at the radar ${ m constant}$		
1.	Prepare the TTR for the reflector tilt checks				
	a. Perform the procedures in table 2-1				
	b. On the ta	arget antenna contr	ol group, set the TEST switch to TEST		
	c On the target test control, set the FREQUENCY control to 500 and set the switches as indicated:				
	Switel		Setting		
	SIGNAL	LEVEL	00		
	FREQS	ELECT	LOCAL		
	MODE		CW		

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(U) Table 8-8. Special Antenna Reflector Tilt Checks-TTR and MTR - Continued

Aup .	Operating. Narmal indication	Corrective procedure			
L.	Continued				
	d. On the target track control-power supply, set the switches as indicated				
	Switch	Setting			
	AGC-MANUAL	AGC			
ļ	TTR PULSE WIDTH	SHORT			
	IND	Ř			
	e On the target error voltage	mon tor, set the switches as indicated:			
	Switch	Setting			
	(IF TEST)— ADJ	ADJ			
1	RCVR TEST	AFC			
	BEACON-TARGET	BEACON			
	PRESET	2			
	f. On the target IF lest genera	ntor, verify that the OSC switch is set to OFF			
	g. On the missile control nd TARGET	cater group, set the TARGET STANDBY MISSILE switch			
2.	Prepare the MTR for the reflector tilt checks.				
	a. Perform the procedures in table 2-1				
	b On the massile track control drawer, set the TEST switch to TEST and the DISABLE switch to the down position.				
	 on the missale control-indicator group, set the FREQUENCY control to 500 and set the switche as indicated. 				
	Switch	Setting			
	TARGET—STANDBY— MISSILE	MISSILE			
	SIGNAL LEVEL	00			
	MODE	CW			
	d. On the missite track control-power supply, verify that the AGC MANUAL switch is set to AG				
		e monitor, set the switches as indicated			
	Switch	Setting			
	(IF TEST)—ADJ	ADJ			
	RCVR TEST	AFC			
	PRESET	2			
	BEACON -TARGET	BEACON			
	£ On the missile IF test gene	erator, verify that the OSC switch is set to OFF			
8.	Acquire the radar test set				
		ntenna to the coordinates of the radar test set.			
	a. a sometion one arbitrachi race of	oltage monitor, rotate the PRESET 2 COARSE control fully mockwi			

1' Tuble 5-8. Special Antenna Reflector Till Checks—TTR and MTR—Commund
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u _{tep}	2per attices	Normal makes of	a recilie postedure
3.	Continued		

- c Adjust the PRESET 2 COARSE control slowly counterclockwise until the BEACON AFC LOCK indicator luminates. Adjust the control to obtain an indicat on between 45 and 55 on the RCVR TEST meter.
- d Hold the AFC SENS switch in the HI position and slowly adjust the PRESET 2 control to obtain an indication of 50 on the RCVR TEST meter

4. Perform the reflector tilt check.

- On the appropriate error voltage monitor set the IF TEST)—ADJ switch to (IF TEST) and the RCVR TEST switch to (AZ)
- b. Set the appropriate SIGNAL LEVEL switch to 35
- c. Position the antenna in azimuth to obtain a maximum indication on the RCVR TEST meter
- d On the appropriate track control-power supply set the AGC MANUAL switch to MANUAL Adjust the GAIN control to obtain an indication of approximately 20 on the RCVRTEST meter.
- e With the antenna set to the elevation coordinate of the radar test set, slowly vary the antenna azimuth to obtain a maximum indication on the RUVR TEST meter
- f. Adjust the GAIN control to obtain an indication of 20 on the RCVR TEST meter.
- g. Set the appropriate SIGNAL LEVEL switch to 00
- b. Very slowly, move the antenna in azimuth toward the coordinate of the radar test set to obtain a null dip on the RCVR TEST meter. The null is very narrow. Verify that the antenna elevation is still set to the radar test coordinate. The angle error meter or scope error trace can be used.

The RCVR TEST meter indication is 20 or less.

Perform the procedures in step 5 below.

- . Position the appropriate antenna to the coordinates of the radar test set
- Repeat a through, above for elevation, substituting elevation for azimuth
- k. Set the AGC-MANUAL switch to AGC
- ! Set the appropriate radar test set FREQUENCY control to 100.
- m. On the appropriate error voltage monitor set the CF TEST* ACM switch to ADJ and repeat steps 3 through 4, above. In step 4b above, set the SIGNAL LEVEL switch to 30
- n Repeat k through m above for the FREQUENCY control values of 300, 700, and 900
- o. Proceed to step 6 below.

Adjust the antenna reflector tilt.

- Set the appropriate radar test set FREQUENCY control to 500.
- b. Verify that the appropriate SIGNAL LEVEL switch is set to 00.
- c. On the appropriate error voltage monitor, set the (IF TEST).— ADJ switch to ADJ and repeat steps 3 through 4: above. Position the antenna to obtain a minimum indication on the RCVR TEST meter.

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(U. Table 6-B. Special Antenna Reflector Titl Checks-TTR and MTR-Continued

Step	Operation Numer indication Corrective procedure	
5.	Continued	
	d Remove any antenna drift by adjusting the appropriate BAL control on the half control	indwheel driv
	Caution: Personnel should be aware that the antenna drive is energized on the antenna turntable. This can cause errors in the adjustment.	Do not stan
	 Loosen the eight setscrews which secure the track antenna reflector assembly suppreceiver-transmitter. 	oort to the trac
	f Perform step 4h above while alternately adjusting the azimuth and a evation tilt a to obtain the lowest null dip on the RCVR TEST meter. Set the RCVR TEST's (AZ) or (EL) to correspond with the tilt adjusting screw being adjusted.	
	An RCVR TEST meter indication of less than 20 can be both the (AZ) and (EL) channels.	obtained fo
	(1, Repeat a throu	igh f above.
	(2) Contact the unit	direct suppo
	g. Without moving the antennal tighten the four accessible setscrews loosened in ϵ	above
	A Carefully elevate the antenna to 1,600 mils without using the reflector for levera the four remaining setscrews	ge, and tighte
	Repeat a through h above	
6.	Reestablish the switch positions.	
	a. Set the appropriate SIGNAL LEVEL switch to 70 and the FREQ SELECT switch	to REMOTE
	b. On the appropriate error voltage monitor, set the (IF TEST). ADJ switch to PRESET switch to 1	ADJ and t
	c Set the TARGET STANDBY MISSILE switch to STANDBY	
	d. On the appropriate track contro. power supply, set the AGC MANUAL switch t	o AGC

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(L. Table 6.3. Special Simultaneous Tracking Checks: TTR MTR, and TRR

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Stap	Operation	Normal	indication		Corrective procedu	IZ6	
1	Explanat	non of the inte	rcept computer	simultaneo	is track printo	ut.	
	Note 1	All coordinate small errors bet	aata is reconstructiveen actual RSPL	ted using RSF I and MTR TI	UX, Y, and H d RA, E D and F	ala Reconstruct L'opordinate posi	lion can caus
	2.	The difference computer	between the MTI	R and MTRO	columns a due to	paralinx seconto	the otteree;
	3	Standard devia	Lions are comput spersion (litter) o	ed using the I the position	TTR/MTRC sam differences	pied differences	and therefo
	4	seconds. Three	epresenta 300 RS consecutive RSP e data samples are	U samples are	ased to comput	ie an average dats	ox,matery 5 sample O
		data (TT!	cion rence R minus MTRC)	Standard deviation (jitter)	TTR/TRR	Parallex corrected MTR input data	MTR input data
	TOYI		anno remo ci	STD DEV	TTR/TRR	MTRC	MTR
		046 1232 22	TTR MTRC	,01	5.51	100 1100	2
	AGC ——			02	B1 87-41		2.41
	range —		10	.52	95261.42	95261.32	96131.40
X. Y.	& H &	DIF(REF)	48.00				
Tolera	THE	X(YDS)	05	48	88483 90	88483 85	88383.85
X Coc	ordinate 🔨 🛖	Y(YDS)	.13	.75	35289.37	35289 24	35189.24
Y Coc	ordinate 🗇	H(YDS)	02	.64	9565 50	9565.51	9465.51
H Coc	ordinate -		09	52	95740.48	95740.37	95601 16
Slant	range	A ₁ MILS)	0 00	01	1213.45	1213.45	1214 05
	12 Mary Control	ELINATE CI.	0.00	0.1	101.94	101 04	

Indicates number of bad data cycles transmitted to computer to obtain 100 good cycles. The number should be less than 10

101 94

2, Analyze the intercept computer simultaneous track printout.

Venfy that the target selected meets the tracking criteria in table 4-27, step 8 a.

0.00 2 DATA SAMPLES REJECTED AND 100 ACCEPTED THIS SET

Determine if a constant TTR MTRC D error exists. Determine if the error exists only in the TRR mode or for different TTR/TRR pulse width modes

.01

Note. The numbers below refer to the key numbers given in step 3 below

101 94

- (1)1, 2, and 10
- Refer to step 6 below. (2)
- Determine if a cyclic TTR MTRC D error exists (predictable lag and lead errors) in 0 the TRR mode

Azımuth-

Elevation -

E(MILS)

(L) Table 6.9 Special Simultaneous Tracking Checks—TTR, MTR, and TRR. Continued

CONFIDENTIAL Normal undirectors Corrective procedure

Svep	Open	Цол	Normal indication	Carrective procedure
2.	Con	Linued		
	d		he TTR-MTRC A and E ang R data is larger than the TTR	guar data for one errors. Negative errors indicate./TRR data.
				(1) 3-16, 18-22, 24, 30, and 38-41
				(2) Refer to step 4 below.
	€			no. E data has a cyclic error pattern. Attempt to minted MTR and FIR/TRR A and k angular data
				10, 11, 16, 16, 20, 22, 34, 39, 40, and 42
	f	determin	ne if any predominant errors ates and troubleshoot account tomputer, the values are d	RR, MTRC, and MTR R, X, Y and H values to sor blases exist in any specific coordinate or in al- ordingly. For a properly functioning RSPU and determined by the MTR and TTR radar D, A, and
				Refer to g below for corrective pro- cedure key numbers.
	g		he STD DEV (stundard devi dard deviation does not exce	ation) for the TAGC and MAGC data. Typically, ed 0.5 volts.
				25, 26, and 28-30
	ħ			standard deviations. It can be assumed that the four times larger than the standard deviation
				(1) 6-9, 16, 18, 19, 20, 22-33, 35, 40, and 41
				(2) Refer to step 5 below
	t	the sam	pled data. The X, Y, and H	Y, and H coordinates represents the dispersion of f coordinate standard deviations typically do not the error tolerance permitted for the X, Y, and H
				Refer to h above for corrective pro- cedure key numbers.
3.	Lasti Key		oblem areas which can affect	amultaneous track results.
	no.		le problem	Corrective procedure
	1. 2. 3 4. 5.	TRR re High p Servo e Angle Servo e	and TTR range zero ange zero ower servo amphifiers not ba error converter de balance error modusator balance gain	Tables 2-8 and 2-16. Table 2-24 Tables 3-6 and 3-11, step 2 Tables 3-6 and 3-11. Tables 3-6 and 3-11. Tables 2-10 and 2-19

Tables 4-8 and 4-17.

7. Incorrectly set AUTO rate

(U. Table 6.9 Special Simultaneous Trocking Checks—TTR, MTR, and TRR—Continued
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Step	Open	Lion	Normal indication	Corrective procedute
3.	Con	tmued		
	Key			
	RO.	Possible	problem	Corrective procedure
	8.	TF toot o	generator turned on	Check.
	9.		est set selected	Check.
	10		rtly entered site parallax	Contact computer operator
				Check the parallax entered into the
				track data processor
	11,		d TTR antenna leveling	Table 2-3.
	12.		d TTR antenna boresight	Table 3-7
	13.		d TTR telescope collimation	Table 3-8
	14.		d TTR orientation	Table 3-20
	15.		e intercept computer	Contact computer operator
	16.		inge and angle conversion	Tables 6-3 and 6-7
	17.	incorrect	rt track data processor TRR errection	Table 4-26.
	18.	TTR and	d MTR antenna reflector tilt	Table 6-8.
	19	Incorrect eter feet	t antenna drive motor tachom iback	Refer to figures 18, 19, 52, and 53
	20.	AL anter	nna drive motors not function-	Refer to figures 18, 19, 52, and 58
	21	Servo pr	eampufier unbalance	Replace servo preamplifier
	22		e angle error encoders	Refer problems to direct support unit.
- 1	23,		response of the TTR or MTR	Refer to figures 17 and 48.
		receiver	to target signal amplitude or	•
	0.4		frequency shift	
	24.		k between sum, azimuth, and	Refer to figures 17 and 48
	25	No se in	the digital communications link	Table 6-9, step 5.
	26	Tracking	Jitter due to excessive AGC noise	Refer to figures 17 and 48
	27,	Tracking the serve	; ptter due to noise pick up in	Refer to figures 18, 19, 52, and 53.
	28	Tracking	noise due to excessive AFC	Tables 2-6 and 2-14.
		jitter and	l target flaming	2004C3 21 C EBC 2-11.
	29		noise due to AC frame-neutral	Refer problem to direct support unit
			ng problem	I
	30		tter or bias due to masking or	Table 4-27, step 7
			h reflections	*
	31	angle em	; jitter due to incorrectly switched or modulator bandpass filters	
	32	Tracking	noise due to noise pick-up on do he high power servo amplifiers	Refer to figures 18, 19, 52, and 53
	33	Tracking	bias or , itter due to wind	Check radome inflation.

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(U, Table 6.9 Special Simultaneous Tracking Checks—TTR MTR, and TRR. Continued
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		CONFIDENT AL						
5 (ep	t pe	acon Northa uno cato o	Controller processive					
3	Cor	ntinued						
	Key							
	10	Possible problem	Corrective procedure					
	34	Conductive materia, ased within RF beam (such as safety rails, posts, and lightning protection)	Evalua.e					
	35	External IF (TV) or RF interference	Refer problem to direct support unit.					
	36	Ice on the radomes	Remove ice					
	37	TTR or MTR antenna not mechanically balanced	Refer problem to direct support unit.					
	38	Damaged TTR or MTR antenna reflector or horn assembly cone	Refer problem to direct support unit					
	39	Mechanical binding of antenna in azimuth or elevation	Refer problem to direct support unit.					
	40 1	Worn TTR or MTR antenna data bearings and gears	Refer problem to direct support unit.					
	41	Bad TTR or MTR antenna tumtable race	Refer problem to direct support unit.					
4.	Peri	orm a simultaneous static track check of the	parallel antenna data.					
	а	On the target antenna control group, set the	TEST switch to TEST					
	2	On the target track control power supply, set the AGC-MANUAL switch to MANUAL Adjust the GAIN control to obtain an indication of 20 on the TARGET SIGNAL STRENGTH meter						
	с	On the missile track control drawer, set the TEST switch to TEST and the DISABL switch to the down position						
	đ	On the missile track control power supply, set the AGC-MANLAL switch to MUAL Adjust the GAIN control to obtain an indication of 2 on the RECEI SIGNAL meter.						
	e	On the range radar power control-indicator, set the TEST - OPERATE switch to TES						
	f	On the track data processor, set the BA MODE SWITCH to SIM TRACK						
	g	Have the computer operator perform the pre-	ocedures in h through a below					
	h	On the keyboard/display, enter 6 and depres						
	I.	Enter STK and depress CR						
	Ĵ.	Turn on the printer plotter only when data	s aveilable and a convils required					
	k,	Obtain the TARGET TRACK status.	a a serie of the result of the results of the resul					
		a reason southing.						

On the radar power control indicator, remove the MISSILE AZ and EL HP SERVO

Set the TTR and MTR antenna elevation and azimuth to 800 mils

fuses and the TARGET AZ and EL HP SERVO fuses.

• (U. Table 6.9. Special Simuitaneous Tracking Checks: TFR, MTR, and TRR -Continued

Cep	Oper	tton.	Normal indication	Control	tive procedult					
4	Continued									
	73.	n. Check the target and missile aptenna azimuth and elevation								
		n 799 and 801 mils.								
				Repl thro	ace fuses as required, and repeat $n = n$					
	o. Set the target and massile ranges to 100,000 yards.									
	p.	On the	MTR and TTR RSPU's, set H, and record the correspond	the COORD 8	SELECT switch to X, then to Y and son COORD DISPLAY					
	q.	Turn on	the intercept computer prin	ter/plotter to	print at least three samples					
	r Remove the printer/plotter printout and analyze the data									
	The A and E STD DEV values do not exceed 0.02 mils. The D, R and H STD DEV values do not exceed 1.5 yards.									
				Refe num 29	er to step 3 above, specifically kebers 8, 9, 15, 16, 22, 25, 26, and					
			The TAGC and MAGC	values are beta	ween 1.8 and 2.2 volts.					
	}		•		Refer to figures 17 and 48					
			The TAGC and MAGC	STD DEV valu	ies do not exceed 0 02 volts.					
				Refe	er to step 3 above, specifically k ibers 8, 9, 15, 25, 26, and 29.					
			The TTR/TRR and M respective RSPU values	TR X, Y, and recorded in p	H values are within 2 yards of t above.					
					Refer to step 3 above, specifica key number 10.					
				(2)	Repeat p and q above.					
	6.	On the	printout, note the TTR-MT	RC X, Y, and	H data					
			The track data process noted respective TTR-		d Δh values are within 2 yards of i and H data.					
				(1)	Refer to step 3 above, specifics key number 10.					
				(2)	Repeat p and q above.					
	ŧ	Replac	e the fuses removed in m abo	we.						
	R.	Turn o	n the intercept computer pri	nter/plotter to	print at least three samples.					

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(U) Table 6.9. Special Simultaneous Tracking Checks-TTR MTR, and TRR-Continued

Svep	0)10	2 4 (07)	Normal indeed for	Co n	entire procedure					
4	Co	ntinued								
	U	v Remove the printer/plotter printout and analyze the data.								
			The A and E STO D	EV values do not	exceed 0,05 mils.					
				(1)	Verify that the antenna servos are not drifting					
				(2)	Refer to step 3 above, specifically key numbers 6-9, 15, 16, 19, 20 22 25 27, 29 32 33, and 35					
	a	Not fy ti	he computer operator the	u the check pas I	geen completed					
	x	On the OPERAT	mage radar power con- FE	revinducator, se	t the TESE OPERATE swimen to					
	3	On the r switches	n sale track and target to to AGC	ack control pow	er supplies, set the AGC: MANUAI					
	Z	On the ti	rack data processor, set N	ODE SWITCH t	o PACTICAL					
5	Per	form a sim	ultaneous track check of	the radar test set	t to evaluate tracking noise					
	ti									
	ь	6 On the test adapter in the target radar control console disconnect P99 from J1 Conect P99 to J1 on the track synchronizer								
	c	On the signal distribution panel in the rugar set group, connect a coaxial cable between M PREKNOCK 343 (MTR and CPLA T VIDEO TEST (FTR)								
	d	Obtain the TARGET TRACK status								
	е	e Acquire the radar test set in the TTR short pulse mode using the procedures in t 2.7, steps 1 and 2.								
	f	f Acquire the radar test set in range using the MULT, BIN mode								
	g									
	h	То кеер vo tage п	from thanging the PRES	NDBY-MISSIL ET 1 admistmen	e procedures in table 2-15, steps 1 E switch in the TARGET position ts, the PRESET switch on the error ET 2 control or PRESET 3 control,					
	f.	AUTO to	rack the radar test set in	elevation, azim	uth, and range with both the TTR					
	,	Or the u	arget test control, set the possible to 20 on the TAI	SIGNAL LEVE	L switch to obtain an indication as					
	k	Have the	computer opera, or perfo	TOTAL GIGHTED	ACTOMACATA THE RELE					

1. Table 6 9. Special Similar one as Trach of Checks, (Th. 17) and This Con more

			CONFIDE	NTIAL	
Step	Oper	ation	Norma nuce on		Correct a procedure
5	Con	tinued			
		On the	keyboard/display, enter 6 ai	nd depress	CR
	m		TK and depress CR		
	n .	Turn or	the intercept computer pri	nter plott	er to print at least 3 samples
	O.	Remov	the printer/plotter printou	t and anal	yze the data
			H STD DEV values d	io not exc	do not exceed 0.3 m.ls. The D, R. X, and reed 2.0 yards. These tolerances are met intout data samples analyzed
			Note: A sizou indicati meter will increase the ST	ion less tha DDEV valt	an 20 on the TARGET SIGNAL STRENGTH
					For troubleshooting purposes, any suspected coordinate problem can be individually evaluated by placing any combination of the coordinates in a manual mode. The radar test set signal level can also be varied. For additional information, refer to step 3 above, specifically key numbers 6, 7, 8, 19, 22, 25, 26, 27, 28, 29, 32, and 35. If a D STD DEV is excessive, perform step 6 below.
	l p	If desu	ed, perform the test with th	ie TTR in	the long pulse mode
			The D, R, X, Y, and I	STD DE	V values do not exceed 4 vards.
		Set the	MTR and TTR azimuth, el	evamon, a	nd range switches to MAN
	,		TARGET STANDBY-MI		
	8.	Set the	target test control SIGNAl	LEVEL	switch to 70.
	t	On the	target error voltage monito	or, set the	BEACON-TARGET switch to TARGET
	et.	Discon	nect the coaxial cable adde	d in c abov	vė
	t.	connec	meet the coaxial cable from stor P26, disconnected in a st adapter	above R	track synchronizer and reconnect coaxia, deconnect coaxia, connector P99 to J1 of
6			simultaneous track check u d deviations (jitter).	sing the I	F test pulse to evaluate tracking accuracy
	a.	nect c	oaxia. connector P26 from	11	TEST switch is set to NORMAL Discon
	ь	P99 fr	om Jl. Connect P99 to JI	of the trac	
	E	On the M PRI	e signal distribution panel in EKNOCK J43 (MTR) and C	tne radar PIA, T VI	set group connect a coaxial cable between DEO TFST (TTR)

(U) Table 6-9. Special Simultaneous Tracking Checks-TTR, MTR, and TRR-Continued

Ope	ration	Normal indication	Corrective procedure					
Cor	ntinued							
E:	B: On the target IF test generator, connect a T-connector between J5 ATTN IN and P							
e. On the missile IF test generator, set 0-90 dB ATTENUATOR to 30. E coaxial connector P10 from J5 ATTN IN. Connect a coaxial cable betwee connector added in d above and J5 ATTN IN.								
f.	or, set the switches as indicated below:							
	S	witch	Setting					
	OSC		ON					
	MODE		PULSE					
	SLEW		Center (off)					
	PULSE V	ATTENUATOR	30					
	FULSE V	IDIH	SHORT					
g.	On the ta	uget antenna contro	ol group, set the switches as indicated:					
	Swi	tch	Setting					
	TEST		TEST					
	MULTIE		OFF					
	RANGE		TTR					
	AGC-LI	N-LOG	AGC					
h.	On the ta	arget track control- IC and the TTR PU	power supply, verify that the AGC-MANUAL switch is LSE WIDTH switch is set to SHORT.					
í,	On the m switch to	nissile track control the down position.	drawer, set the TEST switch to TEST and the DISABLE					
j.	On the m	nissile track control G.	-power supply, verify that the AGC-MANUAL switch is					
h.	On the r	ange radar power	control-indicator, set the TEST-OPERATE switch to					
I,	On the t	rack data processo WITCH to SIM TRA	or, set the BANK SELECTOR switch to BANK 1 and ACK. Set the MTR/TTR PARALLAX switches to 000.					
m.			perform the procedures in n through p below.					
n,			ter 6 and depress CR.					
0.	Enter STI	K and depress CR.						
p.	Tum on t	he printer/plotter o	only when data is present and a copy is required.					
q.	Obtain th	e TARGET TRACE	K status.					
F.	Acquire t	he IF test pulse in t	he AUTO range mode for both the MTR and TTR					
S.		range displayed by						
t.			he setting of the BEACON DELAY switches.					

Step

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(U) Table 6-9. Special Simultaneous Tracking Checks-TTR, MTR, and TRR-Continued

Ope	ration	Normal indication	Corrective procedure			
Cor	ntinued					
u.	DISPL	AY indicates the TTR RSPU	ches and depress the ENTER switch until COORD range noted in a above.			
U.	switch	to the OUT position, and sle	et the SLEW RATE to 2500, operate the SLEW aw the IF test pulse to maximum range.			
w.	Reacqu	ire the IF test pulse in the A	UTO range mode for both the MTR and TTR.			
x.	Position	the MTR and TTR antenna	a elevation and azimuth to 0 mils.			
У.	and the same of the same of the standard suitches until using					
Z,	On the		the SLEW RATE switch to 50. Operate the SLEW			
aa.	When t	he auto rate stabilizes, set th	ne SLEW RATE switch to 500.			
ab.	Observ	e the track data processor g error.	Δy indicator. The indicator represents the range			
		Note. Disregard the Ah	and Az indicators.			
			lay does not exceed 3 yards.			
			Verify that the positions of the antennas are as set in x above.			
ac.	Turn o	n the intercept computer or	inter/plotter to print at least three samples.			
ad.		e the printer/plotter printou				
			es do not exceed 0.5 yards.			
			Refer to step 3 above, specifically key numbers 15, 16, 25, 26, and 29.			
		The TTR-MTRC D v	alues do not exceed 3 yards.			
			Check operation of the RSPU range circuits.			
ae.	strengt TTR is	h increases, the STD DEV	rmed with different signal strengths. As the signal will improve (get smaller). As an example, if the sest pulse to maximum amplitude to minimize any			
af.	the The D	TR to the long pulse mode,	o check TTR long pulse performance by switching Do not change the IF test generator pulse width, at exceed 1 yard. The TTR-MTRC D values should			
diffe the p set t	rent sizes r performanc o approxir	and velocities. The track data present of the such an evaluation, it is nately 30 dB. The observed pe	TR operators to train for acquiring and tracking targets of occasor and/or intercept computer can be used to evaluate recommended that the MTR IF test generator attenuator be rformance will then be essentially the performance of the will be necessary to repeat, s, and u above.			

(U) Table 5-9. Special Simultaneous Tracking Checks-TTR, MTR, and TRR-Continued

Step	Dps	metion Normal indication	Corrective procedure					
6.	Continued							
	ag.	Set the MTR and TTR range	switches to MAN.					
	ah,	On the TTR IF test generator	, set the switches as indicated:					
		Switch	Setting					
		OSC	OFF					
		SLEW	Center (off)					
		SLEW RATE	OFF					
		0-90 dB ATTENUATOR	90					
	ai,	On the track data processor, set MODE SWITCH to TACTICAL. Set the MTR/FI PARALLAX (YDS) switches to the site parallax.						
	aj.	Reset the MTR RSPU BEACON DELAY switches to the value recorded in t about and depress the ENTER switch.						
	ah.	Disconnect the coaxial cable connected between the TTR and MTR IF test generators Reconnect the coaxial cables to J5 ATTN IN of each IF test generator.						
	al.	Disconnect the coaxial cable	added in c above.					
	am.		from J1 on the track synchronizer and reconnect coaxis in a above. Reconnect coaxial connector P99 to J1 or					
	an.	Notify the computer operator	r that the checks have been completed.					